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THE MONSTERS OF THE DEEP AND CURIOSITIES OF OCEAN LIFE

A BOOK OF

ANECDOTES, TRADITIONS AND LEGENDS

WITH NUMEROUS ILLUSTRATIONS

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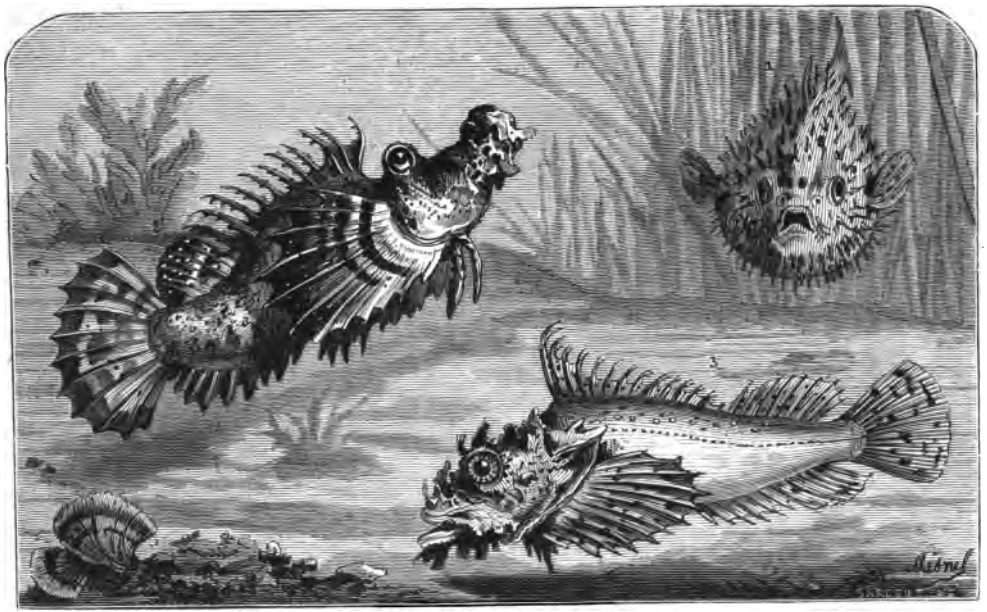

GROUP OF STRANGE FISHES:

1. The Diodon.—2. The Sea-Scorpion.—3. The American Bullhead.

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THE

MONSTERS OF THE DEEP:

AND

CURIOSITIES OF OCEAN LIFE.

A BOOK OF ANECDOTES, TRADITIONS, AND LEGENDS.

"Strange stories oft the mariner unfolds
Of ocean-monsters, which, in days of yore,
Much moved the minds of men; strange stories told
And others true as strange, of mighty forms
That dwell beneath the surface of the deep."

ANON.

LONDON:
T. NELSON AND SONS, PATERNOSTER ROW;
EDINBURGH; AND NEW YORK.

1875.

189. g. 145

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Preface.

THE present volume is founded on M. Armand Landrin's "Les Monstres Marins," and might not inaptly be described as "Contributions to the Folk-lore of the Sea." It is partly a book of zoological descriptions, and partly a collection of illustrations of the "vulgar errors" and "popular superstitions" once entertained in reference to the "Monsters of the Deep."

To the particulars accumulated by M. Landrin, the Translator has added numerous facts and details gathered in the course of his own reading; and he ventures to hope that this *mélange* of the instructive and entertaining—bearing, as it does, on a side of Natural History not too frequently examined—may be accepted with some degree of favour both by the Press and the Public.

The reader will please to observe that the word "Monster" is used in the French sense, as indicating something remarkable, abnormal, or of peculiar interest.

W. H. D. A.

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THE MONSTERS OF THE DEEP.

Introduction.

ACCORDING to Voltaire, "monster" was one of the words in the French language most difficult to define; its definition is not less difficult in English.

Some grammarians attempt to solve it by asserting that monsters are beings unnatural, or contrary to nature; but then, strictly speaking, how can any created organism be "contrary to nature"?

Those animals or plants which we designate hideous or shapeless are not *opposed*, are not *contrary*, to the great natural laws, which, by the way, are far from being thoroughly understood; they are simply *unlike* the types of plant life or animal life we are most accustomed to see. And, in this sense, so-called deformities are not always *anomalies;* they are merely unusual facts.

By the word "monster" is meant, according to the dictionary, "whatever is strange, incredible, extraordinary, fantastic, hideous, astonishing, excessive of its kind, of an unheard-of and fabulous ferocity."

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But in the following pages we shall understand as *monstrous* "every animal which is abnormal or prodigious in comparison with other animals of the *same class*;" *anomalous*, "every animal prodigious in relation to other animals of the *same species*."

For example, a whale of the usual size and shape is a monstrous but not an anomalous being, since it is of immense size compared with the other *cetacea*, but does not differ in any respect from the other *whales*.

Thus understood, the word "monster" is not made to convey any idea of deformity, but necessarily designates whatever astonishes us, and impresses itself on our imagination,—most frequently in a sense opposed to the impressions produced upon us by the harmony of proportion and beauty. And it is certain that the word has been so understood by most great writers. Think of Pope, and his

"Faultless monster which the world ne'er saw."

La Fontaine represents the mother owl saying to the eagle:—

"Mes petits sont mignons:
Beaux, bien faits, et jolis sur tous leurs compagnons."

[My little ones are darlings:
Handsome, well-made, and fair beyond all rivals]

Yet, in truth, they were

"De petits monstres fort hideux," –

the ugliest little monsters imaginable.

That is, they were little *monsters*, but not *anomalous* beings; though ugly in the eyes of the eagle, they were handsome in the eyes of their mother, whom they resembled. If they had had three legs, however,—a leg

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more than herself,—she would not have cherished any such illusion.

The lively and wise old essayist Montaigne observes:—"Those animals which we call monsters are not monsters in the eyes of God, who sees in the immensity of His work the infinite number of forms which it comprises."

Supported by these authorities, we shall boldly venture forth in search of monsters, summoning around us the animals of fable, and those, still more extraordinary, which are revealed to the seeker by the study of nature,—endeavouring to reduce the exaggeration of song and legend to the proportions of truth,—wandering at will through a frightful world of gigantic, and, from our stand-point of the beautiful, *hideous* creatures,—of creatures whose curious forms shock all our ideas, or whose voracity is appalling to the hardiest imagination!

We know that their organization, whether simple or complex, is equally wonderful and interesting to the scientific eye; but judged by our ordinary ideas of what is fair, harmonious, or pleasing, we may fairly term them—MONSTERS.

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Book First.

MOLLUSCA AND CRUSTACEA.

CHAPTER I.

GIANTS AMONG THE PIGMIES.

"A sight too fearful for the feel of fear."—KEATS.

"In whatever way it originated, and however the huge wonder may have behaved itself at any period, quietly or tremendously, nobody can doubt that the creature is a benevolent creature."—LEIGH HUNT.

THE LARGER CRUSTACEA.

THE monstrosity of greatness is a purely relative thing. To the wren the eagle appears colossal. The wren looks upon the humming-bird as an insignificant creature. The rat, compared with the ant, is larger than the whale compared with man. In size, as in distance, everything is relative.

We ought, therefore, to regard as of monstrous dimensions, not only those animals which seem to *us* enormous, but also those which far exceed in magnitude the majority of other animals of the same class as themselves. Such is

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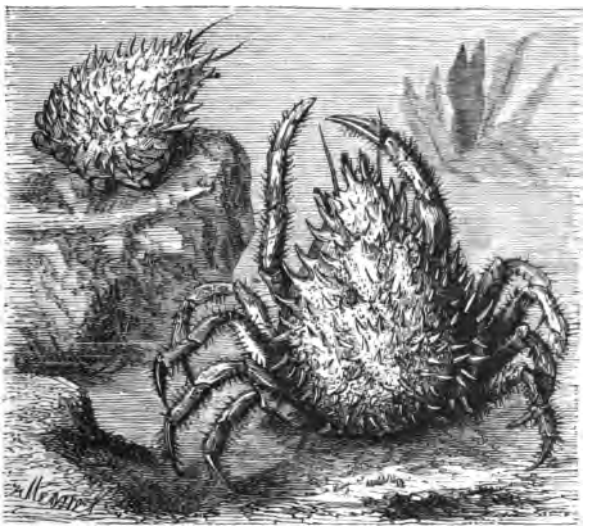
the case with the types whose study will be the subject of this chapter, and particularly the *Crustacea*.

The Paris Museum of Natural History, writes Pouchet, recently received the remains of the largest crab ever known. Each of its pincers measured $1^{m.}$ 20 in length.*



SPIDER-CRABS.

The space between the two feet, when extended, was upwards of $2^{m.}$ 60. It was caught in Japan, on the eastern coast of Niphon, between the 34th and 35th degree of north latitude, by M. de Sieboldt. It belongs to the species of "Spiny Spider-Crab" (*Maia squinada*);† ani-

* A mètre is equal to 39.3707904 inches, or 3 feet 4 inches nearly.

† Belonging to Tribe C., *Brachyura*, in Order II. *Decapoda* of the Podophthalmatous Crustacea.

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mals of no great beauty, even when they are not larger than a child's head. It was known, of course, that they were found of larger dimensions in the Chinese seas, but it was not suspected they ever attained to such proportions as those we have just described. The crab we speak of was undoubtedly an individual of great age,—some solitary elder, which, motionless at the mouth of its cavern, and lying in wait for the passing fish, had seen centuries glide away.

M. Blanchard, who formerly taught at the Museum the history of articulated animals, presented this interesting specimen, accompanying it with some interesting remarks on the age and growth of certain living species.

The spider-crab of Japan is not the only crab which grows to an indefinite size. On the coasts of the United States is found a lobster very similar to those of our markets. For several years two individuals of this species were exposed in the galleries of the Museum, where, until the sorrows of 1870 fell upon unfortunate Paris, they attracted the attention of even the most incurious visitors by their extraordinary dimensions. In their immense size originated a belief that the lobster of America was much larger than that of Europe. Such is not the case. Only, of old there was no war waged against the American lobsters, and they grew at their ease.

A certain species of lobster inhabits the shores of the islands of Mauritius and of Réunion. Formerly, those which the fishermen caught were remarkable for their enormous size. At the present time, they are very small; the inhabitants of the two islands will not suffer them to grow.

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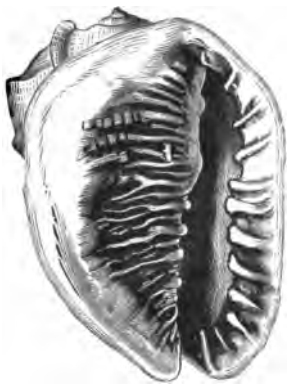
THE HELMET-SHELL OF MADAGASCAR AND THE CERITHIUM GIGAS.

Molluscs whose shell consists of a single piece or valve, —*Univalves*,—are more or less fantastically modelled, or shaded, and of greater or lesser dimensions; but not one of the species merits precisely the epithet of *monstrous*, either from its ugliness, its size, or still less its ferocity.

The largest is, perhaps, the Helmet-Shell of Madagascar, and this does not exceed sixteen to eighteen inches in height.



HELMET-SHELL OF MADAGASCAR (*Cassis cornuta*).

The *Helmet-Shell* (*Cassis*) is a genus of gasteropodous molluscs of the family *Buccinidæ*,* and in habits and appearance much resembles the common whelk, which is so familiar an object on the fish-stalls of the London streets. The convex shell is rather thick and solid, with an angulated outer lip, and is composed of several brightly-coloured calcareous layers.

The helmet-shells form no unimportant article in what we may call the commerce of conchology. The thick inner lip is detached, and a portion of the last whorl, which is formed of layers superimposed on one another, and tinted alternately a transparent white (a bluish or delicate rose)

* Order *Prosobranchiata* in Section A. (*Branchifera*) of the Gasteropodous Molluscs.

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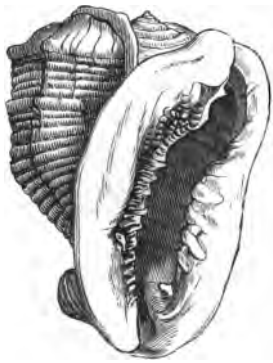
and a blackish-brown. These layers being smoothed down as much as possible, are sold, under the name of *capotes*, to engravers, who work upon them in bas-relief, in such wise that the whole design, traced on one of the layers, has the subjacent layer for its base. Beautiful effects are thus produced, and the fragments, with their beautiful ornamentation, are as much prized as *cameos*. The *Cassis cornuta* is a species much valued for this purpose.



CASSIS RUFA.

Another species, *Cassis rufa*, can be used in the same way for obtaining relief in pink on a ground-colour of mahogany.

The longest of the univalves is the *Cerithium gigas*,* a fossil shell about two and a half inches (0^{m}. 7) in length. A living specimen has been found in the Australian waters, and is the only example known. It forms one of the curiosities of the Delessert Museum at Paris.

The family *Cerithiadæ*, however, includes many species, which are chiefly found in estuaries and brackish waters. They are very numerous in the Tropics, and especially in mangrove-swamps. The shell is spiral, elongated, and many-whorled. The aperture is oval in shape, oblique in direction, and has a short tube or canal curved to the left and backwards.

* Order *Prosobranchiata* in Section A. (*Branchifera*) of the Gasteropodous Molluscs.

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THE BIVALVES—GIGANTIC OYSTERS.

Acephalous molluscs,—that is, molluscs with no apparent head,—are always enclosed in two shells; they are called *Bivalves*.

Of these the best known is the Oyster; and as people have frequently spoken of giant oysters, it is with these we shall first entertain our readers.

A mariner who visited Jeddo, in Japan, in 1643, states, in his narrative of his voyage, that upon this coast live great numbers of oysters, which are, for the most part, an ell and a half in length, and a half-quarter wide.

Such assertions, if really referring to oysters, are scarcely credible; and the ancient naturalists were far more exact when, in their description of the animals discovered during the military expeditions of Alexander the Great, they recorded that they found in India oysters a foot in diameter.

I have somewhere seen it asserted that on the American coasts oysters as big as dinner-plates abound, and that one of these is sufficient to supply the appetite of several persons. This is a fable worthy of Aelian in old, or of Munchausen in modern, times. The lie is proportionate in size to the oyster! The oysters collected on the shores of the states of Delaware and New York are, in truth, of a good size, but very far beneath the dimensions ascribed to them by our new Pintos, our "liars of the first magnitude."

The Pearl-Oyster (*Avicula margaritifera**),—which, let us note, is not an oyster proper (*Ostræa*), but an *Avicula*, —is of a noble size; but all who have been induced to taste of it report most unfavourably of its edibility. More: the

* A genus of the family *Aviculidæ*, in Class I., Lamellibranchiata, of the Molluscs proper.

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animal being very small, and the foot alone digestible, very little flesh is obtainable from it. And yet it is probable that the observers have been referring to the pearl-oyster in the wonderful narratives already cited.

THE PEARL-OYSTER.

To sum up: the immense comestible molluscs of this species, celebrated by credulous travellers, exist only in the imagination of those who have described them.

THE PINNA.

The Pinna,* or *Wing-Shell*, is strangely named, in French, *le jambonneau*, or the "small ham," in allusion to its triangular form and the smoky-brown colour of its shell, which roughly remind one of a well-known and much-esteemed part of the pig.

* A genus of Lamellibranchiate Molluscs belonging to the order *Dimyaria*.

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Its scientific name, say some authorities, is derived from the word *penninin* or *penim*, employed in the Bible to designate this mollusc; but the Greek language having borrowed nothing from the Semitic tongues, it is much more probable that it is so designated in allusion to its byssus, which may well be likened to the tuft or plume (*πίννα*) ornamenting the helmet of the Greek warriors.

The shell of the pinna is always thin and frail, frosty and horny in appearance. It consists of two equal wedge-shaped valves, closely united by a ligament along one of their edges. On the side of the ligament the mouth is closed; the foot is small and conical. Between the valves escapes a remarkably long and silky beard, or *byssus*, which attaches it to the soil.

We need hardly say that this circumstance is not peculiar to them; the mussel anchors itself in the same manner, and the same appliance is found in other molluscs.

The pinnæ are remarkably abundant in the Red Sea, the Mediterranean, and the Pacific Ocean. Their byssus is woven by the Sicilians into a strong and lustrous fibre.*

The gigantic species which has led us into this description inhabits the coasts of New Zealand. In the Zoological Galleries of the Museum may be seen magnificent specimens, at least 16 inches long by 9 inches broad. Their valves are covered with bristling and semi-tubercular shells.

We have spoken of the byssus of the living mollusc; it is easily conceivable that these flexible, brilliant, long, and tenacious filaments attracted, at a very early period, the attention of the ancients, and were used for weaving stuffs.

* Some cloth made of the byssus of the *Pinna nobilis* was exhibited at Paris in 1855.

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Pink-hued pearls are not infrequently found among these molluscs. Their value, though inferior to that of the white pearls, is not inconsiderable. They were well-known to the fishermen of Acarnania; and Strabo, Aelian, Ptolemy, and Theophrastus make mention of them.

Pliny relates a pretty fable in reference to the pinna.

"It lives," he says, "in the muddy depths, and we never meet it without its companion, which some name the *pinnothera*,* and others the *pinnophylax*. This is a tiny squilla, a kind of crab; and *food* is the object of their association. The pinna, blind and helpless, opens its valves, revealing its body to the little fish disporting around it. Emboldened by impunity, they swarm into the yawning cavern. At this moment the pinnothera, which is on the watch, gives warning to the pinna by a slight bite; the latter immediately closes its valves, crushes all the prey it has engulfed, and divides it with its associate."

By way of comment on this romance of the Latin naturalist, we may add that the pinnothera is a bright red tiny crustacean, which does, in very truth, swim into the mollusc's open mouth, and by so doing gains a double advantage, — it secures itself against the attacks of its numerous enemies, which its weakness prevents it from resisting, and nourishes itself at the expense of its host.

THE TRIDACNA GIGAS.

We have now arrived at the king of the shell-fish, the *Tridacna Gigas*, or Giant Clam, called by the French the *grand bénitier*, or "great holy-water basin."

To describe the form of the *Tridacnidæ* (a family of the

* The *Pinnothères*, or Oyster-Crab—sometimes called Pea-Crab— is a genus of Decapod Crustacea, residing in various bivalve shells.

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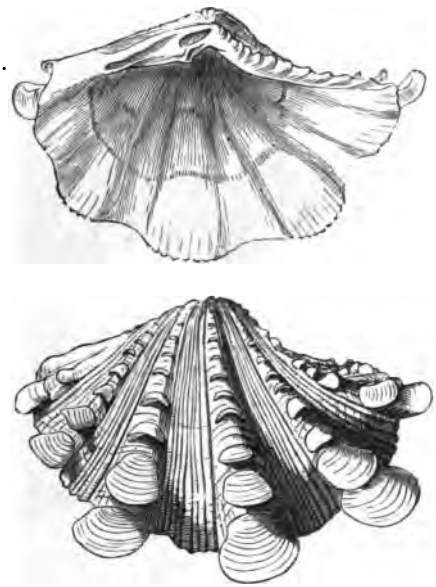
lamellibranchiate molluscs) is difficult, and we prefer to point the reader's attention to the accompanying illustration. As he will see, the artist has represented but a single valve. It is broadly ribbed, and these ribs present a strongly dentated margin. The teeth of the one valve



THE TRIDACNA, OR CLAM.

lock into the gaps or sockets of the other, so that the mollusc can close itself hermetically.

Like other acephalous molluscs, the tridacna produces a byssus, by the aid of which it clings to rock or stone; and the reader can form an idea of the strength of this byssus if he remembers that the weight of a single clam is

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sometimes equal to six hundred pounds. It is impossible to sever the byssus except with a hatchet, and even then more blows than one will be needed to sheer it cleanly.

BATH MADE OUT OF THE SHELL OF THE TRIDACNA GIGAS.

The tridacna gigas—that is, the animal itself—weighs only 14 pounds; but the weight of each of the valves varies from 250 to 300 kilogrammes, and they are a mètre to a mètre and a half in length. In China they

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are made use of as watering-troughs for cattle, and the baths of wealthy mandarins are frequently made out of one of these shells. They are employed for the same purpose by many a dusky mother in Tropical lands.

The Greeks first gave it the name of *Tridacna;* but it was not until the fifteenth century that it was introduced into Europe. The illustrious Dampier found numerous specimens near the Celebes; he calls them, in his narrative, "great red scallops," and says that an empty shell weighed 258 pounds. The "bénitier," we may add, is not unlike a scallop in the arrangement of the deep furrows which terminate at the rim.

The Venetian Republic presented to Francis I. a superb tridacna, which remained in the royal treasury until the reign of Louis XIV. But the curé Languet, after much solicitation, obtained it from the latter monarch, and converted its valves into two splendid holy-water basins, which still decorate the church of Saint Sulpice.

Other churches—such as that of Sainte Eulalie at Montpellier, and that of Saint Jacques at Havre—possess also for holy-water vessels these fine shells. Several remarkable specimens belong to the Museum at Paris; but the largest known to be extant are at Rome.

The animal living in the tridacna shell is vividly coloured, especially the species called the Tridacna safrana, which is blue at the edges, violet at the centre, streaked across with pale blue bars, and besprinkled with tiny round spots of brown and yellow. When the voyager, penetrating with his glance the shallow waters, discovers a shoal of these animals, their open valves all bright with many colours, he feels as if he gazed upon a garden of the most lustrous and resplendent submarine flowers.

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On plunging the tridacna into alcohol, it assumes a very intense violet-red; and possibly, some day or other, our chemists will utilize its tinctorial properties. Hitherto, we believe, no experiments have been made in this direction.

All the tridacnidæ inhabit the Tropical waters, but the *gigas* species is met with only in the ocean which separates Hindustan from Australia, and in the Red Sea. It frequently lives at a very great depth, and one can hardly conceive how the divers contrive to seize it.

The Arabs and the Indians, and especially the inhabitants of the Moluccas, eat its flesh; the flavour is something like that of the lobster. It is, however, a disagreeable article of food, leathery, and difficult of digestion.

Moquin-Tandon tells us of a pearl, quite as big as the egg of a bantam hen, perfectly spherical, and of a milky whiteness, which was discovered in the tridacna gigas.

But, unfortunately for the Arab fishermen, such treasure-trove is very rarely found.

Some credulous authorities record as a fact—which the reader, however, will do well to discredit—that if an unskilful diver gets his leg or his arm between the valves of an open-mouthed tridacna, the latter closes up immediately, and detains his would-be captor at the bottom of the water until he perishes of suffocation. All that can really be said in reference to such an assertion is, that the mollusc *has* strength enough to hold a man in spite of his efforts to escape; but it is exceedingly doubtful whether a diver could contrive to thrust his limbs between the open valves, or whether the valves would be open at the exact moment a robust leg or arm was brought invitingly within their reach. And it must be remembered

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that, even at the depth to which the Indian divers descend, there is sufficient phosphorescent light to reveal to them the objects in their immediate neighbourhood.

M. Vaillant, the eminent French naturalist, put the strength of this mollusc to the test in the following manner:—He fastened one of the valves to a post, and then hooked upon the other bucket after bucket filled with water, until he compelled it to open. In this way he ascertained that a tridacna only 0^{m}. 21 in length,—say nine inches,—can support or lift up a burden of 4914 grammes;* one of 0^{m}. 25, or ten inches long (nearly), 7220 grammes; while a third, weighing 5 cwt., yields only to a pressure of 17 cwt. and two quarters, rather more than three and a half times its own weight. Now, could any man, by his own unaided exertions, move a weight of 1800 lbs., or 16 cwt.? If you would make a tridacna gigas yawn in spite of itself, you must harness three good horses to one of its valves!

Such marvels are there in the deep, if you will but examine them with a curious and attentive eye!

* Four hundred and fifty-one grammes are equal to a pound avoirdupois.

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CHAPTER II.

THE KRAKEN.

THE Kraken is, or is supposed to be, a cephalopodous mollusc.

The Cephalopods (or "head-footed") are a class of mollusca ranking highest in organization of that division of the animal kingdom. They owe their name to the fact that their organs of prehension and locomotion are attached to the head; an arrangement to which you may see a kind of approximation in the highest gastropod molluscs. These organs have been variously entitled *arms*, *feet*, and *tentacula*. They are not to be compared with the limbs of vertebrate animals in any other respect than the purposes which they serve.

One particular genus among the cephalopods has received the name of *Poulpe*, from the Latin *polypus;* but the term is sometimes extended to all the cephalopods, so as to include the *Poulpe* (or *Octopus*) properly so called (the *pieuvre* of the French), the *Sepia*, or Cuttle-fish, and the *Calmar*, or *Calamary*. It is for this reason that the kraken is always spoken of as a gigantic poulpe, though it is now well understood to be, in reality, a gigantic calmar.

The appearance of a cephalopod is familiar to most sea-

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side visitors. An elongated sac or *mantle*, shaped like an egg, a cylinder, or a wine-glass, out of which emerges a great round head, with two enormous flat eyes, placed laterally; on the summit of the head, a couple of hard horny mandibles, like the beak of a parrot; and around this beak a ring of eight or ten vigorous "arms" or processes attached to the aforesaid head: such is the cephalopod, as broadly sketched.

THE POULPE.

On their inner side the arms are furnished with a twofold parallel row of *acetabula* or suckers. Each vent consists of a species of cup-shaped cavity, with a *papilla*, or little muscular projection, in its centre. When the poulpe seeks to attach itself to an object, it applies one or more of these suckers, the papilla being on a level with the edges, then withdraws this papilla so as to produce a vacuum below it. Thus each sucker forms a powerful adhesive organ.

When the cephalopods are in want of food, they seize

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and flagellate with their tentacles any animal within their reach—fish, crab, or mollusc—and bring it close to their beak, which they make use of to tear the prey in fragments. For it is necessary to remark that their arms are also instruments of prehension, as well as of suction. Certain animals,—as, for example, the leech,—have at the bottom of their sucker a dental organism adapted for rending the swollen skin they have seized hold of; but the cephalopods have nothing of this kind.

The manner in which the cephalopods swim is very curious. In order to fulfil their functions, and keep up respiration, it is necessary that a great quantity of water should bring a sufficient supply of air-bubbles to the branchiæ. The water penetrates into the interior of the pallial chamber, which protects the branchiæ; next, the mantle contracts, and the water is expelled through an anterior tubular orifice, or "funnel," between the eyes; a fresh expansion takes place, the water re-enters, is again propelled, and so the process continues.

Each time that the mantle contracts, the water driven through the funnel forms a jet, whose reaction impels the animal in the opposite direction. This is nature's prototype of a well-known physical toy, the "squirt," or "portable pump." At each expulsion the animal advances, and advances even rapidly.

The cephalopods on our European coasts are all of small dimensions, but there is reason to believe that the deep seas nourish several gigantic species. And to one of these the Scandinavian traditions have given the name of Kraken.

None of the legendary animals, I think, have excited a more complete incredulity, from the days of Aldrovandus,

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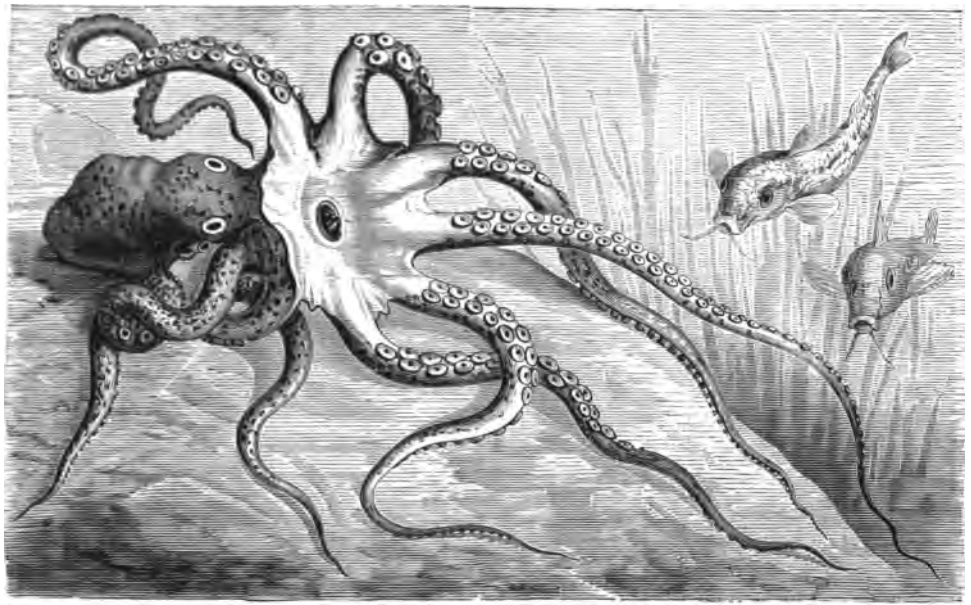

A POULPE ON THE WATCH FOR PREY.

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Banks, Johnson, Lacépède, down to our own time; and yet it is now demonstrated clearly that, when we have stripped the history of the kraken of the exaggerations which have gradually clustered around it, as is the case with all popular narratives, we see before us a genuine monster, of very respectable dimensions.

THE GIGANTIC POULPE OF THE GREEKS AND ROMANS.

Aristotle, after having occupied for centuries a lofty position in the world of science, is now regarded with comparative indifference. Yet it is certain that very few modern physicists can be compared with him for sagacity of view and preciseness of observation. It is astonishing how many facts, presented to us as new discoveries, we find already recorded in the works of the great Greek philosopher, and generally without any of that hyperbolic verbiage which characterizes the writings of the ancients.

Aristotle, then, was acquainted with the history, and even with the anatomy, of the cephalopods to a truly astonishing degree: he speaks of a great calmar (τεῦθος) of the Mediterranean, about ten feet long. We shall shortly see that there is nothing improbable in such a measurement.

At Carteia, according to Trebius, a poulpe issued from the sea every evening to devour salt provisions. Its continual larcenies irritated the fishermen, who, to put an end to them, surrounded their curing-yards with elevated fences. It was in vain: with the help of a tree, the poulpe clambered over them. It would never have been discovered but for the sagacity of some dogs, who fell upon it one night as it was regaining its natural element. The novelty of the spectacle, the ugliness of the briny monster, its extraordinary size, the horrible odour which it spread

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abroad, filled with terror the fishermen who hastened to the spot. It combated bravely with the dogs, sometimes lashing them with its tentacles, sometimes knocking them down with its two stronger and heavier arms. It was at length killed by repeated harpoon strokes.

Pliny, quoting this story from Trebius, treats it as a prodigy, and is evidently very unwilling, as we are, to admit its truth.

The head and arms of this poulpe were brought to Lucullus.* The tentacles were several feet in length, so that a man could scarcely span them. The remains of its body, which had been greatly mangled, weighed 700 pounds.

This story is repeated by Fulgosus, with a few variations.

A similar anecdote is told by Aelian. A poulpe, whose dimensions he compares to those of the greatest whales, was killed, he says, by the hatchets of some Spanish merchants, whose fish-stores he had plundered.

Pliny seems more reasonable when he guarantees the existence of sepiadæ only two cubits, and calmars five cubits long, and shows himself suspicious of Trebius; but in another chapter of his work he describes, under the name of *Arbas*, a poulpe whose arms were of such extraordinary length that he was unable to pass out of the great ocean, the Atlantic, into the Straits of Gibraltar, the water not being sufficiently deep! And thus he falls back into his customary credulity.

Strange, and almost incredible, as some of the stories about the poulpe appear to be, we have good evidence that they are not altogether without foundation. In Beale's

* The Romans ate the cephalopods as a common article of food, just as the fishermen of Normandy do at the present day.

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"History of the Sperm Whale" an anecdote is related, on the authority of Sir Grenville Temple, that shows the formidable character of this fish:—

"A Sardinian captain, bathing at Jerbet, felt one of his feet in the grasp of one of these animals; on this, with his other foot he tried to disengage himself, but his limb was immediately seized by another of the monster's arms.

SURPRISED BY A POULPE.

He then with his hands endeavoured to free himself, but these also in succession were firmly grasped by the poulpe; and the poor man was shortly afterwards found drowned, with all his limbs strongly bound together by the twining arms of the fish. It is an extraordinary fact that where this happened the water was scarcely four feet in depth."

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We find it difficult to accept the details of the foregoing anecdote, as we cannot imagine who was an eye-witness of them but the following is an experience of Mr. Beale himself :—

"While upon the Bonin Islands, searching for shells on the rocks, which had just been left by the receding tide, I was much astonished at seeing at my feet a most extraordinary-looking animal crawling towards the surf, which had only just left it. I had never seen one like it under such circumstances before; it therefore appeared the more remarkable. It was creeping on its eight legs, which, from their soft and flexible nature, bent considerably under the weight of its body, so that it was lifted by the efforts of its tentacula only a small distance from the rocks. It appeared much alarmed at seeing me, and made every effort to escape; while I was not much in the humour to endeavour to capture so ugly a customer, whose appearance excited a feeling of disgust, not unmixed with fear. I, however, endeavoured to prevent its career by pressing on one of its legs with my foot; but although I made use of considerable force for that purpose, its strength was so great that it several times quickly liberated its member, in spite of all the efforts I could employ in this way on wet slippery rocks. I now laid hold on one of the tentacles with my hand, and held it firmly, so that the limb appeared as if it would be torn asunder by our united strength. I soon gave it a powerful jerk, wishing to disengage it from the rocks to which it clung so forcibly by its suckers, which it effectually resisted; but the moment after, the apparently enraged animal lifted its head, with its large eyes projecting from the middle of its body, and letting go its hold of the rocks, suddenly sprang upon my

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arm—which I had previously bared to my shoulder, for the purpose of thrusting it into holes in the rocks to discover shells—and clung with its suckers to it with great power, endeavouring to get its beak, which I could now see between the roots of its arms, in a position to bite!

"A sensation of horror pervaded my whole frame when I found this monstrous animal had affixed itself so firmly upon my arm. Its cold slimy grasp was extremely sickening, and I immediately called aloud to the captain, who was also searching for shells at some distance, to come and release me from my disgusting assailant. He quickly arrived, and taking me down to the boat, during which time I was employed in keeping the beak away from my hand, quickly released me by destroying my tormentor with the boat-knife, when I disengaged it by portions at a time. This animal must have measured, across its expanded arms, about four feet, while its body was not larger than a large clenched hand. It was that species of *sepia* which is called by whalers 'rock squid.'"

On the coast of Normandy the poulpe is known as the Minaur, and is regarded by the fishermen with the utmost enmity. It breaks down the stone walls of their fish-parks,—the low-built inclosures in which the advancing tide deposits all kinds of fish, whose escape is, of course, prevented by the surrounding masonry. The minaur contrives to pull down with its suckers a portion of this masonry, and conceals itself in the middle of the inclosure on the watch for its molluscous prey, while the fish deposited therein by the tide easily escape through the gaps thus made. The fashion after which the fishermen

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do battle against the minaur is described in a lively manner by the author of "Life in Normandy."

The hiding-places of the minaurs—for, on the occasion to which our author refers, there were two—having been ascertained, a party of French and English set out, resolved upon unearthing and destroying them. Angela and Madame le Moine, we are told, each took a clip—that is, a long pole with an iron hook at the end—Frederick took the pickaxe, and the whole party marched forward in the water. Cross and Hope, two of the expedition, took up their positions on the dyke, nearest to the spot which had been shown them as holding the minaurs.

Frederick began first by scraping a considerable hole in the sand with the pickaxe; he then took one of the clips, thrust it into the hole, and gave it a violent jerk; it was drawn deeper into the sand after this jerk.

"That's into him!" he exclaimed, and he gave the end of the clip into Madame le Moine's hand; little Matilda took hold of it also.

Frederick then took the other clip from Angela, and did the same with it as he had done with the first, returning the staff to Angela when he felt that it was fast.

"Now haul away!" he cried.

The three women pulled with all their force; something white was seen, and then the water became black.

Frederick put down his pickaxe, and jerked violently; something like a large eel appeared above the water, and Frederick nearly fell back from the force of his jerk.

"There is one of his arms," he said; and he gave another blow with his pickaxe. After a number of jerks another arm showed above the water.

"Pull steady, and let the water clear a little," said

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Frederick; and he put out his hand to help Angela. The water, running rapidly towards the shore, soon became clear. Hope and Cross, as they looked down from the more elevated station where they were standing, soon saw the state of matters below: they could distinguish two white substances that were twisting in the water like two large eels; several more could be partially seen half-hid under the sand or large stones. The clips had penetrated into a bag that looked like a man's cotton night-cap, for it was much the same shape, size, and colour. The colour, though white, was semi-transparent, and shone more brightly than a cotton night-cap would have done. It was evident that the eel-looking branches which sprang from this bag were firmly fixed to the stones under which they were hid, for many of the stones had been moved from their places by the strain which the party were giving to the clips. When the water cleared, Frederick hooked his pickaxe into one of the half-hid branches, renewed the jerks he had given to the other two, with the same success, for after shaking one of the large stones violently, something seemed to give way, and another arm was twisting in the water. The like process was repeated several times, and always with the same result; until, finally, bag, arms, and all, appeared above the water, falling down into a lump; one arm only remained below water, and that was fixed to a stone of about two or three hundredweight, which, in spite of its size, was dragged out of its bed in the sand by the united strength of the old woman and the two girls. Frederick hooked his pickaxe round this remaining arm, gave the usual jerks, it gave way, and a long mass of nasty-looking stuff was lifted in the air.

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"Well done!" said Madame le Moine. "The ugly beast, we have settled him! He will pull down no more of the fish-pond, nor swallow any more of my fish. Is he not an ugly beast?"

"He is, indeed," said Hope, who now could see it in all its deformity. It looked, says our author, like an enormous cuttle-fish. It had the same form: the bag-looking body, the two huge eyes, and the branch of feelers springing from them. These feelers, however, were far larger and longer than those of any cuttle-fish he had seen before; they were fully as long as a man's arm, and were covered on one side, from one end to the other, with lumps rather bigger than a hazel nut. As they examined it, and began to stretch out these feelers to look at the creature's size when expanded, they observed a strong muscular action in them all, and the lumps began to open and shut like so many mouths, —opening to the size of a shilling, and then again contracting till they looked like warts.

"I don't believe they eat with these hideous valves," said Cross; "they use them for clinging to the stones, or perhaps for grasping their prey."

"Yes," said Madame le Moine, "they fasten themselves on the stones; and tremendous must be their strength, when they draw those large stones out of the wall, with such a weight resting above: you may suppose, when you saw how firmly they grasp, that no fish could get away, if once seized hold of by them."

"One fine calm sunny morning," said Cross, "I organized a minaur-hunt with a fisher-girl at Granville, and we started when the tide ebbed, armed with crook and knife. After a scramble over the rocks, and a long search, my guide pointed to a small pile of empty limpet and freshly

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broken crab shells and claws at the bottom of a shallow rock-pool, which glittered in the sun with an endless play of bright colours, but was unusually bare of living creatures. 'Behold, the minaur is here!' she said; and forthwith began to beat the cover, while I looked out for the game. The girl poked about with her crook under the sea-weed, at the deepest side of the pool, in the shadow of a bit of rock; but I observed that she kept her feet out of the water. Presently she cried out, 'There are two;' and out they came, sailing over the bright shell-sand at the bottom, where I could see them plainly. They looked like two small haggis-bags, with the strings loose, or a couple of animated turnips, darting root foremost through the water; but they were complete, active, living creatures of sound understanding, in spite of their looks. Each squirted a small black cloud of sepia towards the danger, and then swam rapidly away from it behind the screen, jerking backwards by filling the bag with water, and squeezing it out again. The pool was small, speed of no avail, and they seemed to know it; for they stopped suddenly near the shallow edge, and disappeared. First the bag sat down and shrank up, and then the long arms, which had trailed after it while swimming, spread out like a branching star, ploughed up the sand, dragged in stones and shells, buried the bag, and then, having stuck themselves all over with loose rubbish, by means of these glands, the arms too wriggled out of sight, and nothing remained above ground but the open mouth of the bag, and bright eyes looking keenly up at the foe. The bulb had taken root, but it was watching, not vegetating; for any sudden movement of ours was followed by a start, or some slight quiver amongst the shells, as the creature shrank deeper into his hold. My

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barefooted mermaiden stirred them up with her crook, and we watched them for a long time, till I came to the conclusion that they were very sagacious, fierce little monsters, well able to take care of themselves, enormously strong, and with great appetites.

"At last we put them into an earthen jar, for I wanted to keep them alive; but they would not be quiet. They kicked, and twined, and struggled: the long arms were thrust out like an elephant's trunk from his cage, and curled about, and stuck to everything within reach; and so the arms dragged the bag out and dropped it with a flop upon the rock so often, that, in despair, I condemned my pets to death. The girl executed them on the spot with a rusty knife. I have often thought of their rigid, powerful, cold, sticky, clinging grasp upon my hand,—especially when swimming near these rocks,—and the thought was unpleasant, I assure you.

"The fisher-girls dread them, and no wonder. As we walked home my companion told me that her hand was once grasped and held tight by a large minaur, when she was groping in a hole for crabs. The tide was rising, and she could neither free her arm nor drag the cuttle from his fortress. She had no weapon; he was too tough to break by a steady pull, and he held on. She thought her last hour was come, and screamed for help. Fortunately a fisherman was within hail, who came to her and slew the brute; but she had a very narrow escape, for the water was up to her waist before she got free."*

* The interest of our quotation will excuse its length. We have adhered, with very little alteration, to the words of the author, whose descriptions of natural history are not less vivid than correct.

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THE KRAKEN OF THE SCANDINAVIANS.

On comparing the legends and traditions of various peoples with one another, we are struck by the diversity of their character in the North and South. With the one as with the other, their monsters and miracles are real creatures and positive facts, carelessly observed, or magnified by a natural love of the wonderful; but then Imagination comes to bear upon them, and transfigures them into something that never was on sea or land. Gloomy, terrific, and cold, the Scandinavian fable borrows its grandeur of character from the elements of awe and fear; gay, rich, and graceful, the Greek fable attains the same end by making us dream. The North teaches us dread; the South, love.

Striking proofs of this signal contrast we find in studying the two most popular animals among all the inhabitants of the wave,—the *Kraken* and the *Dolphin*.

The Norsemen fall in with a poulpe of considerable size; immediately they seize upon the fact, delight in surrounding it with every exaggeration which can enhance the animal's hideousness, and convert it into a terrible and menacing creature; they begin to believe in the offspring of their own fancies, and abandon themselves to the strange pleasure which fear begets in gloomy minds. They do not greatly disfigure the *form* of the poulpe; in truth, they paint it almost exactly as it is; but they render it terrible by increasing its dimensions tenfold. They end by making it ubiquitous; and every time the sounding-lead reveals to them a previously unknown shallow, they believe they have struck the *kraken*, or "mountain fish."

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The Greeks remark that the dolphin seems to follow their galleys, gambolling and merrily disporting in the sunlit waves. Nothing more is wanted: at once they see in the cetacea a friend of man; and, with this understanding, it is transformed by sculptors, poets, and naturalists, according to their pleasure. Not only does it become unrecognizable by the man of science, but a thousand fantastic adventures are grouped around it, in which it plays the part of a saviour of the shipwrecked: for, was it not necessary that it should remain faithful to its supposed friendly mission? Both the Greeks and Romans were acquainted with the gigantic poulpe, but they did not allow their imaginations to dwell on an object so displeasing. Its image was repugnant to their graceful fancy; they shrank from it altogether. In their poetry no allusion occurs to it; and, whatever some authorities may say, there is no proof that Virgil referred to the monster under the name of Scylla, since this proper name is unaccompanied by any commentary to assist the interpreter.*

* It will be interesting to the reader, however, if we enter a little more fully into the story of Scylla and Charybdis, and its probable signification.

The Homeric episode is thus narrated by Keightley:—"Having escaped the Sirens, and shunned the Wandering Rocks, which Circe told him lay beyond the mead of these songsters, Odysseus (Ulysses) came to the terrific Scylla and Charybdis, between which the goddess had informed him his course lay. She said he would come to two lofty cliffs opposite each other, and between which he must pass. One of these cliffs towers to such a height that the summit is far enveloped in clouds; and no man, even if he had twenty hands, and as many feet, could ascend it. In the middle of this cliff, she says, is a cave facing the west, but so high that a man in a ship passing under it could not shoot up to it with a bow. In this den dwells Scylla (literally, *bitch*), whose voice sounds like that of a young whelp; she had twelve feet and six long necks, with a terrific head, and three rows of close-set teeth on each. Evermore she *stretches out these necks*, and catches the porpoises, sea-dogs, and other large animals of the sea which swim by, and out of every ship that passes *each mouth takes a man*.

"The opposite rock, the goddess informs him, is much lower, for a man could shoot over it. A wild fig-tree grows on it, stretching his branches down to the water; but beneath, 'divine Charybdis' three times each day absorbs

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The Norwegian kraken is as large as an island. More than once have mariners disembarked on its back, thinking it was land,—a fiction which Captain Marryat has borrowed in one of his sea-stories, "The Pasha of Many Tales." It happened thus, we are told, to Eric Falkendorff, Bishop of Nidros, among others, and even Saint Brandaine was similarly deceived. The bishop wrote to Pope Leo, in 1520, a long letter descriptive of his adventure. One Sunday, when sailing on board a Norwegian ship, the good saint regretted that he could not celebrate mass on *terra firma* with all desirable solemnity. Immediately arose from the waves, at no great distance, a new island. Everybody landed, and the saint officiated at an altar which was immediately erected. But he had scarcely quitted the island, and regained the ship, before it gave a shudder, and sank deep into the sea. The island was a kraken!

Olaüs Wormius also, in 1643, maintains that its appearance on the water more nearly resembles that of an island than of an animal: *Similiorem insulæ quam bestiæ*. He asserts that the krakens are very few in number, that they are immortal, and that the *medusadæ* or sea-anemones are neither more nor less than the spawn and eggs of these animals.

and regorges the dark water. It is much more dangerous, she adds, to pass Charybdis into Scylla.

"As Odysseus sailed by, Scylla took *six of his crew;* and when, after he had lost his ship and companions, he was carried by wind and wave, as he floated on a part of the wreck, between the monsters, the mast by which he supported himself was sucked in by Charybdis. He held by the fig-tree till it was thrown out again, and resumed his voyage."

Some writers have thought that, by the word Scylla, Homer meant the bitch of the sea-dog, or seal, a creature often found on the shore of the Mediterranean. But, in spite of what our author says in the text, we apprehend it is not at all improbable that the poet took his idea of the sea-monster from a polypus, or poulpe, a creature which he must certainly have seen, and which could not but prove suggestive to a romantic imagination.

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Other authors of the same epoch, such as Olaüs Magnus, Paulius, Bartholin, and Deber, repeat almost verbatim the statements of Wormius, and also agree that the monster is immortal—which did not prevent the carcass of a kraken from being found, in 1680, in the Gulf of Uewangen. Its arms were entangled in the innumerable rocks which lie about those waters, and the animal had been unable to free itself. When its immense body, which filled nearly the whole channel, began to putrefy, so great was the infection that for a long time men feared it would engender a pestilence. Fortunately nothing of the kind occurred; the animal disappeared, piece by piece, under the incessant action of the waves. This incident was regularly authenticated by one Früs, the consistorial assessor of Bodœn in Northland.

An analogous case has occurred since. We know that poulpes abound on the shores of Newfoundland; and that the fishermen of that mist-enveloped island catch, every year, fully twelve millions of all sizes to use for bait. Well, it seems that at the end of the eighteenth century, one of these molluscs, belonging to a gigantic species, perished upon the reefs, outside of the Pine Light, between the 48th and 50th degrees of latitude. This time, too, a dread was entertained lest the odour should originate some epidemic disease, and men were reassured only when the current had delivered them from the scourge.

We think it very probable that the excitable imagination of the fishermen have often mistaken real islands for the terrible cephalopods. In the following story it would seem that reefs left bare at exceptionally low tides, may have produced some such illusion.

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The geographer Buræus, according to one of the French naturalists, had set down on a chart an island named Gummer's-Ore, in sight of Stockholm. Baron Charles de Grippenheim had vainly sought for it in all directions, when, one day, accidentally turning his head, he perceived, as it were, three points of land which had suddenly risen above the surface of the waves.

"No doubt," he said to the pilot who steered his shallop, "yonder is the *Gummer's-Ore* of Buræus."

"I don't know," replied the pilot; "but be you certain that what we see prognosticates either a tempest or a great abundance of fish. Gummer's-Ore is nothing but a group of reefs lying level with the water, where the *soe-trolden* lurks; or rather, it is the soe-trolden (the kraken) itself."

Of all the authors who have treated of the Natural History of the North, Pontoppidan (1752) and Augustus of Bergen are the two who have most minutely and carefully collected the traditions relating to this animal.

All Northmen affirm, says Pontoppidan, and without the least contradiction in their depositions, that, if they push out to sea a score or so of miles, particularly during the hot days of summer, it suddenly seems to grow shallow under their keels; if they heave the lead, instead of a depth of eighty or a hundred fathoms, it often marks less than thirty. And why? Because a kraken interposes between the mud-banks and the lead. Accustomed to this phenomenon, the fishers cast their lines, in the certainty that fish, and especially cod and ling, abound here, and haul them in very richly loaded.

If the depth of water continues to diminish, and this

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accidental and shifting *bas-fond* rises, the fishers have no time to lose. The kraken is aroused, and astir, and longs to breathe the air, and extend his long tentacles in the sun.

How lustily the boatmen ply their oars, until, having reached a considerable distance, they think they may rest in security! Then, looking back, they discover that the upper portion of the monster covers an area of a mile and a half. The fish, surprised by its ascent, leap in a moment into the watery hollows formed by the unequal protuberances of its outer envelope. Then from the floating mass emerge a number of points or shining horns, which expand and rear themselves aloft, like the masts and yards of a ship; these are the arms, or tentacles, of the kraken; and such is their strength that, if they seized the rigging of a man-of-war, they would infallibly capsize it!

After remaining a few moments on the surface, the kraken descends as slowly as it arose. But the danger is not the less for any vessel within reach; since, in sinking, it displaces such a volume of water, that it occasions as terrible whirlwinds and currents as those of the famous river Male (the Malström).

The "Historia Naturalis" of Eric Pontoppidan is a valuable book to consult, on account of the great number of particulars the curious but too credulous bishop has collected. But it is deficient in method. Authentic facts are mixed with fables. There is no attempt at critical discrimination. Pontoppidan had too much intelligence to believe in the kraken which he depicted, and he himself records his want of faith; but he makes no attempt to free the truth from the fabulous incrustations that have grown around it.

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Such is not the case with Augustus of Bergen, who, carefully comparing all the Scandinavian legends, comes to the conclusion that there *does* exist an enormous poulpe (though far from attaining the dimensions of an island), provided with "arms;" that it may be malodorous; that, when it rises, its tentacles are directed downwards; that these tentacles it very rarely displays; that it rises and sinks in a straight line; and, lastly, that it shows itself only in summer and calm weather. We shall see that modern discoveries have entirely corroborated the conclusions of the Norwegian naturalist.

THE HORNED GIANT (ENCORNET) OF THE LAST CENTURY. — DENYS MONTFORT.

Linnæus, after admitting the existence of the gigantic poulpe in his "Fauna Suedica," and the first six editions of his "Systema Naturæ," denies it in the seventh; but gives no reason for his change of opinion.

Mariners, however, have always placed implicit confidence in the legends of the kraken or the horned giant; and on the coasts of France the proverb was very common: "L'encornet est le plus petit et le plus grand animal de la mer."

In several chapels were suspended votive tablets recording the perils undergone by the crews of divers vessels in their combats with these formidable animals. One of them, which still exists, in the church of Notre Dame de la Garde, at Marseilles, relates the particulars of a battle which had taken place on the coast of South Carolina. Another, which may be seen in the chapel of St. Thomas, at Saint Malo, was placed there by the crew of a slave-trader attacked by a poulpe when on the point of sailing from Angola.

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And, moreover, the voyager Grandpré relates that he has often heard the natives of the American coasts speak of the terrible cephalopod; they are sorely afraid of it, but maintain that it keeps constantly in the open sea.

In 1783, a whaler assured Dr. Swediaur, who records the story in the "Journal de Physique," that he had found in the throat of a whale a tentacle twenty-seven feet long.

Denys Montfort, having read this statement, conceived the idea of questioning the whalers whom Calonne had brought from America in the hope of reviving the great fishery of France, and who had settled at Dunkirk. Two of them declared that they, too, had examined the "arms" of krakens. One, Benjamin Johnson, had found also, once upon a time, a tentacle thirty-five feet long in the jaws of a whale, from which it projected; the other, Reynolds, had fished up a floating tentacle forty-five feet in length, and of a slaty-red in colour.

It was on this occasion that Denys Montfort heard, and with the utmost simplicity accepted, spite of the numerous features of exaggeration which it exhibits, the following story. It is sufficiently curious to deserve reproduction. Denys Montfort accompanies it with an engraving which represents a fantastic poulpe entwining and interlacing the hull, masts, and rigging of a ship. Perhaps this story, too, was founded on an *ex voto* tablet of Saint Malo.

"Captain Jean Magnus Dens, a respectable and truth-telling seaman, after having made some voyages to China for the Gothemburg Company, settled down at last to rest himself in his old age at Dunkirk, where, not long afterwards, he died full of years and honours. He related to

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IMAGINARY VIEW OF THE KRAKEN SEIZING A SHIP.

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me that, in one of his voyages, being in lat. 15° S., at a certain distance from the coast of Africa, between the Island of St. Helena and Cape Nigra, he was caught in a calm which lasted for some days, and resolved to turn it to advantage by cleansing his vessel, and scraping its sides and keel.

"For this purpose, some planks were suspended along the ship's side, and on these the sailors stood while at work. They were thus engaged, when suddenly from the depths of the sea rose one of those horned monsters named in Danish *anchertroll;* and flinging an arm around the bodies of two of the men, dragged them away from their scaffolding, and drew them into the sea. Next, he threw a second arm around another of the crew, who was hastening to climb the mast, and had already gained the first steps of the shrouds. But as the poulpe had seized at the same time the strong ropes of the rigging, and had got entangled in their bends and loops, it could not carry off this third victim, who uttered the most pitiful groans. All the crew hastened to his assistance; some seizing the harpoons and pikes, and launching them into the animal's body, while others, with their knives, or little hatchets, cut off the arm which fettered the unfortunate seaman. It was needful to hold him up for fear he should fall into the water; he had lost all consciousness.

"Thus mutilated, and wounded in the body by five harpoons—some of which, constructed like a spear, and working on a hinge, opened out, if hurled in such a manner as to assume a horizontal position, and hooked the animal's flesh by both points—this terrible poulpe, drawing with it its two victims, endeavoured to regain the ocean-depths by the force of its own weight. Captain Dens,

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not abandoning all hope of recovering his men, let the lines run out which were attached to the harpoons. One of them he held with his own hands, and loosened the cord so long as he felt any pressure upon them. But when the animal had run out the whole length of the ropes, he ordered them to be hauled in rapidly: a manœuvre which was temporarily successful, the poulpe allowing itself to rise; they had already got on board in this way some fifty fathoms, when the animal deprived him of all hope by dragging again upon the ropes, and forced the seamen to let them run out again. They took the precaution, however, of fastening them firmly to the gunwale.

"At this moment, four of the lines broke; the harpoon of the fifth let go its hold, and sprang from the body of the animal with a violence which actually shook the vessel. Thus this brave and honest captain had to mourn the loss of his two men, who had fallen victims to a mollusc, of which he had often heard men speak in the North, yet which he had hitherto regarded as fabulous. As for the man who had been imprisoned in the folds of one of the monster's arms, and on whom the surgeon of the ship had, from the earliest possible moment, bestowed the most anxious attention, he re-opened his eyes, and recovered his speech; but having been nearly suffocated, and almost every bone broken, he suffered terribly, lost his senses, and died, on the following night, in a fit of delirium.

"That portion of the monster's arm which had been severed from its body, and which had remained entangled in the windings of the shrouds, was nearly as thick at its base as a yard of the ship's mizzen-mast, and terminated in a very sharp point furnished with broad suckers, each as large as a pot-ladle. It was about twenty-five feet in

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length, and as the tentacle had not been cut off at the base, because the monster had not even showed its head above water, the captain calculated that the entire arm must have been thirty-five to forty feet long.

"He ranked [and, we should say, very justly] this adventure among the greatest perils he had encountered at sea." *

No more was seen of the poulpe; but the frightened crew, having come in sight of a whale, mistook it for their enemy returning to the charge, and, with a discharge of ordnance, killed the unfortunate cetacean.

Finally, a similar story is told by Pernetti.

Now, all these narratives, the Norwegian legends, the traditions handed down from Greco-Roman antiquity, the pompous descriptions of Sicilian divers who spoke of poulpes as large as men, with arms of ten feet in length, had, not unnaturally, an influence upon men of science. Many of them—as, for instance, Bosc, Valmont de Bomare, and Lachesnaye des Bois—began to think and to say that underneath this mass of fable lay a substratum of truth. And this they might very well assume, since there never was fiction but had fact for its foundation!

Such was the condition in which the question stood at the beginning of the nineteenth century.

THE GIGANTIC CEPHALOPODS OF OUR OWN DAYS.

It has been a singular advantage to modern naturalists that they have obtained specimens of the great cephalopods. As we have seen, their predecessors had only the descriptions furnished by excited, and perhaps terrified,

* Denys Montfort, "Mollusques" in Buffon's Works, ed. Sonning, tome ii.

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men. No one, except the reverend Früs, had had an opportunity of examining it with his own eyes.

Such is no longer the case.

M. Verany writes of a calamary which was five feet long, and weighed twelve kilogrammes. Near Nice, one was caught, weighing fifteen kilogrammes; and another, of about the same weight, on the coast of Dalmatia: it is preserved in the museum at Trieste.

M. Paul Gervais puts on record the existence of a cephalopod measuring nearly six feet. It was caught at Cette, and forms one of the glories of the collections made by the Faculté des Sciences at Montpellier.

But, hitherto, not one of these cephalopods had approximated to the colossal dimensions and terrifying appearance of the kraken. We shall now submit to the reader some observations on creatures of a more stupendous size.

Near Tasmania, the navigator Péron met with a cuttle-fish "as large as a barrel"—a somewhat indefinite comparison. It—the barrel-like sepia—rolled heavily upon the waves, twisting like serpents its hideous arms, which were about eight inches in diameter at the base, and seven feet in length.

In the course of the *Urania's* circumnavigation of the world, Quoy and Gaimard, who were attached to the expedition as naturalists, picked up, "near" the equator, half of the armless body of an enormous cuttle-fish. From the remains, Quoy and Gaimard calculated that the whole animal must have weighed upwards of fifty kilogrammes.

In the same waters, Rang saw one of these molluscs, of the size of a tun, and of a red colour. It may be remembered that such, too, was the colour of the tentacle seen by the whaler Reynolds.

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Pennant observed a cuttle-fish whose arms were thirty-four feet in length, and its body twelve feet in diameter.

The curious may see, in the Museum of the Royal College of Surgeons, London, the mandible of a cephalopod, which is as broad as the palm of one's hand. Another mandible, nearly two feet wide, but a fossil, was discovered by M. Dujardin.

A Copenhagen naturalist, Steenstrup, who has particularly studied these animals, has published some interesting observations on various species of gigantic cephalopods. He had an opportunity of examining an individual which the sea had abandoned, in 1855, on the shore of Gothland. This time the fishermen did not leave it to rot, as in the time of Früs; they cut it up, and carried it away. Its body furnished a sufficient load for several wheel-barrows. The posterior portion, which was preserved, was as large as a child's head. M. Steenstrup exhibited to M. Auguste Duméril, professor at the Jardin des Plantes, the bulk of a tentacle of another species, which was as big as a man's thigh.

An American captain, says Révoil, with whom I was well acquainted at New York, informed me that, in 1836, when within the landfall of the Lucayos, his ship was attacked by a poulpe, which, stretching forth its gigantic arms, had seized and dragged into the waters two of his crew. With a stroke of his axe he struck off one arm, which was found to measure nearly eleven feet ($3\frac{1}{2}^{m}$), and whose girth was equal to that of a man's. This curious specimen of natural history, says Révoil, I saw in the Barnum Museum (a suspicious locality!) in New York,

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where, coiled up in a spiral form, it is preserved in a jar of spirits of wine.

We do not venture to guarantee the veracity of this dramatic incident, but suppose the existence of the tentacle is to be admitted.

To conclude: M. Hartig has drawn and described (1860) a colossal poulpe in the Museum of Utrecht.

But of all these recitals, the most complete, and the one which, justly, excited the most attention, is that of Lieutenant Bouyer, in command of the French Government steam despatch-vessel, the *Alecton*.

We shall leave this officer to speak for himself, only completing his narrative where necessary, with the assistance of the documents obtained from the ship's officers by M. Sabin Berthelot, which that naturalist communicated to the *Académie des Sciences* in 1862.

M. Bouyer was leaning on the bulwark of his vessel, lost in thought, when his reverie was suddenly interrupted by a sailor.

"'Captain,' he said, 'the look-out man signals a wreck, away on the larboard.'

"'It is a canoe capsized,' says another.

"'It is red, and resembles a dead horse,' says a third.

"'It is a mass of sea-weed,' says a fourth.

"'It is a cask,' says a fifth.

"'It is an animal; look at its feet,' says a sixth.

"I directed myself immediately towards the object signalled, which was so differently judged by different men, and I recognized it as the giant poulpe, whose existence seemed relegated into the regions of fable.

"Thus, then, I found myself in presence of one of those

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fantastic creatures which the sea sometimes upheaves from its depths, as if to hurl a defiance at the incredulity of naturalists.

"The opportunity was too unexpected, and too felicitous, not to tempt me. So I quickly resolved to capture the monster, with the view of examining it more thoroughly.

"Immediately all on board are astir; the muskets are loaded; the harpoons thrust into their handles; running knots are made ready; every arrangement for this novel chase is quickly concluded.

"Unfortunately the sea rolled very heavily, and each time the billows caught us on the broadside, the *Alecton* rolled in so disorderly a manner as to impede our evolutions; while the animal itself, though keeping always on the surface of the water, moved to and fro with a kind of instinct, as if desirous of avoiding our vessel.

"After several manœuvres, we contrived to pour into it a score of bullets; but to these it appeared insensible. I then got near enough to launch a harpoon, as well as a noose, or slip-knot; and we were preparing to multiply the number of its bonds, when a violent movement, either of the harpoon or the ship, started the harpoon, which had not got firm hold in the monster's viscid skin. At the same time, the part of the body which our rope had entangled was torn away, and we hauled on board but a fragment of the extremity.

"We now found that it was a colossal *encornet;* its body measuring five to six feet in length; the tentacles, *eight* in number,* were of the same dimensions. Its

* The form of the animal attacked by M. Bouyer is that of a calamary, which is a decapod, yet it is only the poulpes which possess eight arms of equal length. It is probable, therefore, that it had lost its two larger arms in some submarine contest, and that it was its mutilated condition which prevented it from diving rapidly, or ejecting its inky discharge; according to the custom of frightened cephalopods. (Credat Judæus Apella!)

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colour, a brick-like red; its body greatly swollen towards the centre; its eyes, flat, glaucous, large as saucers, fixed. In the combat, which lasted three hours, it vomited foam, blood, and viscous matter which diffused abroad a strong *odour of musk*.

"Both officers and sailors begged of me to launch a boat, and give them another opportunity of garroting the monster, and bringing it alongside. They might, perhaps, have been successful, if I had yielded to their petition; but I feared lest in this bodily encounter the animal might launch one of its long and many-suckered arms against the side of the canoe, might capsize it, or choke some of my men in its formidable thongs, which are charged, it is said, with electric and paralyzing effluvia. And as I was unwilling to expose the lives of my men to satisfy a vain curiosity, I thought it right to control the feverish ardour which had seized upon all of us during this eager pursuit, and gave orders for its abandonment. The mutilated monster was now fleeing from us; and without appearing to be gifted with any great swiftness of movement, dived several fathoms, and came up on the other side of the ship, whenever we succeeded in bearing down upon it.

"The portion of its club-shaped extremity which we had on board weighed fourteen kilogrammes. It is a soft substance, with a strong odour of musk. The part corresponding to the dorsal spine is comparatively hard. It broke easily, and the fracture was white as alabaster. The whole animal, according to my estimate, must have weighed from two to three tons. (!) It breathed noisily; but I did not observe that it ejected any of the inky fluid by means of which the little cuttle-fish about Newfoundland disturb the transparency of the water to escape their enemies. The

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BOUYER'S CALAMARY—A FANCY PICTURE.

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seamen told me that they had seen, to the south of the Cape of Good Hope, some similar poulpes, though of smaller size. They affirm that the animal is a bitter enemy of the whale; and in fact, we may ask, why should not this creature, which seems a rude, half-finished outline or sketch, attain to gigantic proportions? There is nothing to stop its growth; neither bone nor carapace: *à priori*, we can see no limits to its development.

"However this may be, this horrible fugitive from the menagerie of old Proteus long pursued me, like a nightmare, in my dreams. Long did I see fixed upon me that vitreous, sickly glare, and those eight arms, which entwined me in their serpent-like folds. Long did I preserve the recollection of the monster encountered by the *Alecton*, at two o'clock in the afternoon of the 30th of November 1861, at forty leagues from Teneriffe.

"Since with my own eyes I have seen this strange animal, I no longer dare to regard with incredulity the stories of earlier navigators. I suspect that the sea has not said its last word, and that it holds in reserve some scions of extinct races, some degenerate descendants of the trilobites; or rather, that it elaborates in its ever-active crucible some unrevealed model, to become the terror of seamen, and the subject of mysterious ocean-legends."

From various data of information, we are not without hope that the calamary of Bouyer (*Loligo Bouyeri*, Crosse and Fischer), as the monster has been baptized, may again reveal itself to our mariners, and that it may be possible even to capture it.

In truth, putting aside M. Bouyer's sailors, numerous mariners affirm that the calamary, or squid, is not of rare

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occurrence. Thus, the fishermen of the Canary Islands assured M. Berthelot that they had often fallen in with it, while M. Révoil heard the same statement made in Canada, and M. Lacaze-Duthiers on the coast of the Channel. All agree, moreover, in asserting that they have never met with it but in the open sea, at a great distance from every shore.

A calamary twelve feet long! Is not the fable of the kraken fully justified, allowing for the natural exaggeration springing from the unreasoning terror felt by unarmed fishermen tossed to and fro in rude and feeble barks?*

* A sea-monster, not less strange than the creatures described in the text, was seen, it is said, by a Mr. Joass, off the Orkneys, in November 1873.

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Book Second.

FISHES.

CHAPTER I.

A GALLERY OF HORRORS.

THE SCORPÆNA.

THE *Scorpæna* is a genus of acanthopterygious fishes of the Sub-order *Plectognathi*, family *Sclerogenidæ*, and its members are popularly called *Hog-fish* and *Scorpion-fish*.

If the reader has ever opened the celebrated "Fauna Japonica" of Siebold, he cannot fail to have been struck by the number and variety of horrible creatures which, on every page, display their repulsive portrait. It seems that nowhere else could one find such a collection of monsters. Yet on our own coasts, and more particularly in the Mediterranean, forms not less hideous abound.

A skilful pencil has reproduced for us some of these

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curious scorpænæ, and we propose to say a few words respecting them.

"Here and there," says Lesson, when speaking of the coral reefs of Oceanica, "you may discover, concealed in the chinks and crannies of the stone, numerous murænidæ, whose bite is sometimes dangerous, and whose body is curiously variegated; or strange scorpænæ of fantastic form, surpassing in ugliness the wildest conceptions of the most capricious imagination."

THE SCORPÆNA, OR SEA-SCORPION, OF THE MAURITIUS.

It is enough to cast but a glance on the scorpæna of the Mauritius to feel convinced that our naturalist has not exaggerated. Doubtful is it whether among the fantastic monsters with which the celebrated "Tentation" of Jacques Callot is crowded, we should come upon a creature so strange, and apparently so improbable.

Its horrible and repellent appearance is due to the large spiny head, the soft and spongy skin which generally envelopes it, and the sharp bristles standing erect on back and belly.

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Numerous species live in our European seas, but the one represented above, which is coloured with red and carnation, has never been caught elsewhere than in the waters of the Mauritius.

A wound from the bristles of these fish is venomous; but their flesh is said to be tolerably good eating.

For the most part, the scorpænæ live in immense shoals in the open sea. They are sufficiently abundant in the Mediterranean, but rare in the Channel; and none of those frequenting European shores are so ugly as their congeners in the Tropical waters.

In the company of the species we have just described is usually found the *Scorpæna horribilis*, whose general colour is varied with brown and white. Its enormous head is covered with protuberances, four of which form genuine horns.

Body and tail are garnished with callous tubercles; the fins are curiously cut and slashed.

This animal feeds upon crabs and molluscs.

In the rivers of Japan, and in those of Amboyna, is caught another species, which is perhaps the only one of all the fresh-water fish able to support itself in the air by means of its great pectoral fins, which exceed the body in length. The membrane uniting the radii or bones of the fins is loose and elastic.

It appears that the *Scorpæna volans* pursues only small and feeble fish, and that, in spite of its formidable appearance, it eludes with the greatest difficulty the attack of its enemies.

THE AMERICAN BULLHEAD.

On the coasts of Newfoundland and America we meet with a fish which is not unlike the scorpæna. Its dimen-

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sions, like its colouring, are variable. Now of a fine citron yellow, with brownish or blackish marblings on the flanks; then of a very dazzling carmine-red on the sides, brown on the back, and white on the belly; every other part is gray varied with brown. Some specimens are thirteen inches long, others two feet and more.

This fish is the *American Bullhead*.

It is caught about the same season of the year as the cod, and with the same lines as the latter. Once a conger, whole and intact, was found in the stomach of a hemitriptera.

The Hemitripterus is clothed in a flexible skin, finely granulated, and sown with little tubercles; some fleshy strips hang from its body, especially from the nether jaw. Its head bristles with spines and tubercles. The Frontispiece to this volume will give a more exact idea of its appearance than the most precise and minute description.

THE CHIMÆRA MONSTROSA.

The *Chimœra* is a genus of chondropterygious fish, which Cuvier included among the sturgeons (*Sturionidæ*), but which our modern naturalists regard as the type of a distinct family.

There are two known species, the Southern Chimæra (*Chimœra australis*), and the Northern—that is, the *Chimœra monstrosa*, or, as it is sometimes called, the "King of the Herrings"—which is found in the European seas, the Pacific Ocean, and the waters of Japan.

This latter species attains to a length of two or three feet. Its back is silvery, while its fins are of a pale brown colour. A curious appendage is attached to the summit of the head,—namely, a short, upright process, like a

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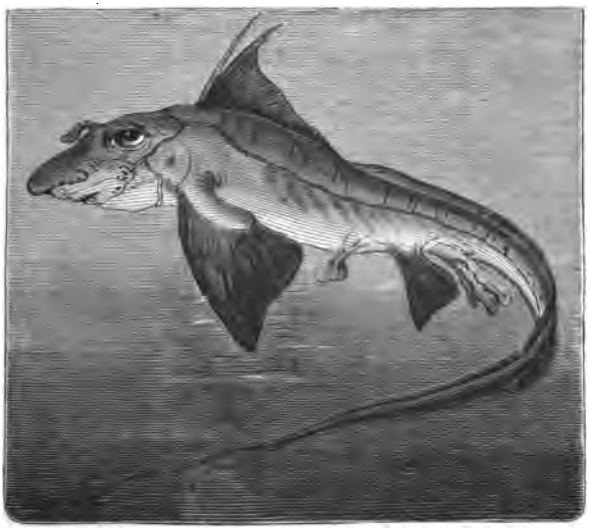
wooden spoon, fixed in the forehead by the handle, curving outwards, and on its inner surface bristling with needles. What is the use of this apparatus? What of this hook and its needles, which seem designed for the



KING OF THE HERRINGS.

animal to hook itself upon some kind of elastic substance? We cannot answer these questions.

The *Chimæra monstrosa* feeds upon herrings and the smaller fishes. It is caught in the open sea during the summer season.

THE EASTERN GURNARD.

The Eastern Gurnard (*Peristedion malarmat*) is a native of the Indian and Mediterranean seas.

Its body is covered with long plates, like the scale or

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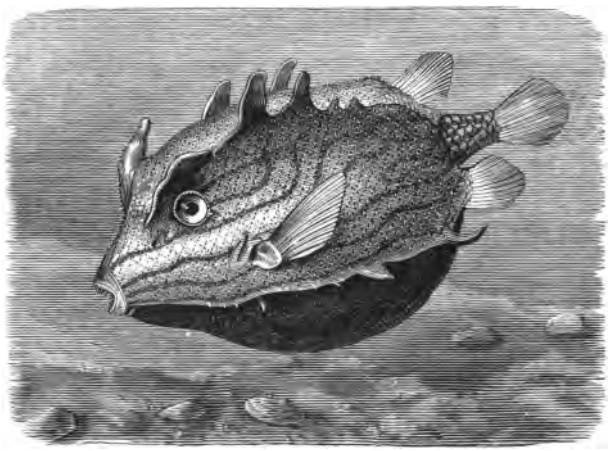
chain armour formerly worn by knights and men-at-arms; they form an admirable defensive equipment.

It is an ugly animal; its octagonal body, elongated into a point, starts from the head, which is out of all proportion. In front of its muzzle are two long pointed horns, of which it makes use for defensive purposes.

Its back is of a fine red, which assumes on the sides a



THE EASTERN GURNARD.

golden tint, and under the belly becomes of a more or less silvery white.

It feeds upon tiny crustacea, medusæ, and molluscs, and lives always in deep water. It is only at the spawning season,—that is to say, towards the equinox,—that, after the fashion of the sardines and herrings, it approaches the land to deposit its eggs.

The Eastern gurnard lives a solitary life. It swims with

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such impetuosity that it often breaks the spines—with which, in some species, it is armed—against the rocks.

Though its flesh is hard and thin, it is caught by the fishermen and used for food.

Pliny pretends that its horns are a foot and a half long; Rondelet, six inches; which is wholly false, these appendages measuring only an inch or two in the largest individuals.

PELOR OBSCURUM.

In the family of *Mailed Cheeks* (*Sclerogenidæ*), says Cuvier, so abounding in fishes of curious form, and among the allied genera of the scorpænæ, which attract the attention of nearly everybody by their ugliness, there exists one still more deformed, and, we may justly say, more monstrous, than any other, which we have endeavoured to designate by a name recalling its deformity—the genus *Pelor*.

It is at the Mauritius, the habitat of the frightful sea-scorpions already described, that we fall in with the *Pelor obscurum*; which it is difficult for the mind to conceive as aught else than the result of the frenzy of a madman, rather than the careful product of Nature.

Its body is elongated, its belly swollen; its cheeks are concave; its eyes prominent and close together; the spines of its dorsal fin erect, apart, and loaded with fleshy turbercles; from the fin which marks the organs of hearing depend some flabby filaments; beneath it are certain separated and crooked claws; its ventral fins are reduced to a simple crest.

A flabby envelope, which yields like a sponge to the finger, covers all its body. Filaments, and flat and severed shreds, are suspended from all parts.

This sea-scorpion is gray, besprinkled with brown spots

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of different sizes, and with little white points, just as if, says Cuvier, it were slightly powdered with flour. Rosy tints are found upon the head, and white or coloured specks spot the tongue and even the palate. The belly and inner face of the side fins are white.

No details of the habits of this monster are on record. We know only, from the food found in its stomach, that it feeds upon the crustacea.

THE JAPANESE STICKLEBACK.

This extraordinary fish has been found only in the seas of Japan, and we cannot but feel astonished that the watch-

THE JAPANESE STICKLEBACK (*Monocentris Carinata*).

ful naturalists of our country have never found a place for it in their encyclopædias. Consequently we are altogether ignorant of its habits.

When dried, the skin is of a yellowish-gray, and the angular lines which separate its scales are of a deep brown. It appears covered with a kind of network. We do not know whether these are the colours which distinguish it when living.

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The entire body is encased in armour. Its head, like that of the scyena, is marked with crests, which bear a vague resemblance to the Gothic ogives. But these crests or ridges are not covered with skin; their tops are bare, bony, and rough to the touch. The intervals separating the various ridges—that is, the depressions—are closed only by transparent membranes; and, finally, the scales of the body, broad, angular, dentelated on the edges, form together a fixed cuirass, as solid as that of the ostracion.

THE SEA-DEVIL.

The Sea-Devil, or Angler (*Lophius piscatorius*), has an enormous head, with a capacious throat, which reminds one, on a larger scale, of that of a frog, or rather of a repulsive toad.

The pectoral fins resemble roughly the human hand; to the snout are affixed two rod-like filaments, which are bony, elastic, and movable.

We seem, indeed, to look upon one of those fantastic fiends with which the ancient engravers peopled their *infernos*. Analogous creatures figure in the well-known design of the "Temptation of St. Antony." It is needless to say that these creatures are not there to *tempt* him; that would be too ingenuous!

Seamen call this creature the *Sea-Devil*, and more than once some of those dangerous simpletons called *practical jokers* have shaken the nerves of timid and credulous persons by placing at night a lamp in the interior of its dried carcass.

The prevailing colour of the lower surface of the body is white; of the upper, brown; the tail nearly approaching to black.

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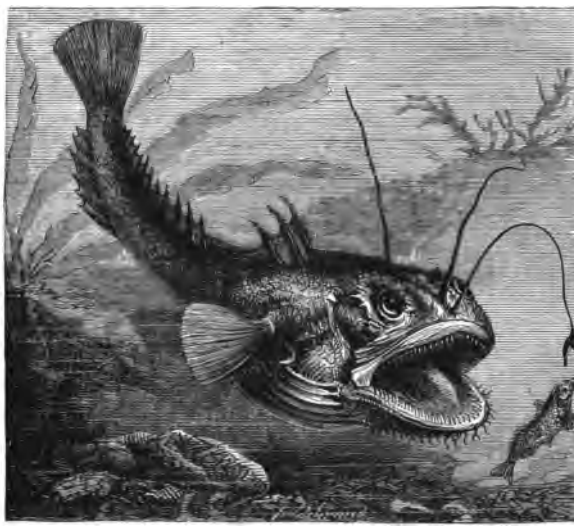

THE SEA-DEVIL.

On the French coast sea-devils about five feet in length are met with. Pontoppidan asserts that specimens occur in the Norwegian waters measuring fully twelve feet. If this be true, it is an enormous fish; but it is not dangerous despite of its formidable appearance, for its horns are flexible, its movements slow, its tail rigid.

To seize its prey, it has recourse to a stratagem: it sinks deeply into the mud, covers itself with wrack, conceals itself beneath the stones, and, according to Lacépède, lets nothing be seen but its horns, which it moves to and fro in imitation of worms. Attracted by the supposed bait, the other fish advance towards it, until it is able to spring upon and devour them. The device of

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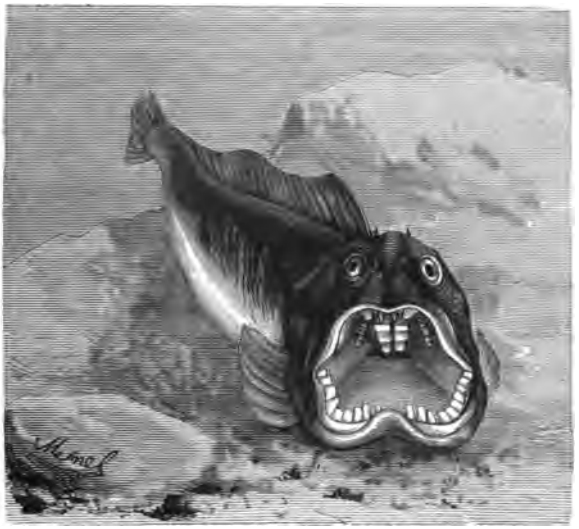

THE SEA-WOLF.

using the horns as bait has not, we fear, been sufficiently investigated.

In the Tropical seas a small species of sea-devil is met with, the *Chironectes rudis*.

THE WOLF-FISH.

Not less grisly in appearance is the Wolf-Fish (*Anarrhicas lupus*), which inhabits the North Sea, and is found in the autumn and winter months on the Greenland coast. It is generally of a large size, and is furnished with jaws so well equipped as to render it a dangerous opponent. Its usual length is two to three feet, but individuals measuring six or seven are not infrequently met with. The

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belly is whitish, the head dark, with white specks, and two rows of large blackish lateral spots. It feeds upon crustacea and shell-fish—breaking them in pieces with its strong conical anterior teeth. Its motion is serpentine and undulating, like that of an eel.

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CHAPTER II.

STRANGE FISHES.

IN the preceding chapter we were forced to bring together some of the most *horrible* fishes; in the present we shall examine the most remarkable among those whose forms or properties are specially *fantastic*. Undoubtedly the two chapters might almost be blended in one, for to speak of a thing as strange is very often to speak of it as ugly; but nevertheless we wish, if possible, to speak separately of fishes disgusting or terrific, and of fishes simply curious—such as the Remora, the Flying-fish, the Ostracions, and the Hammer-headed Shark.

THE REMORA, OR SUCKING-FISH.

Curious little fishes, certainly, are the *Remoras*,* with the oval suckers on their head, and their body of a uniform brown, or relieved by light streaks along the flanks.

The sucker, as we know, consists of an oval rim, thick and contractile, surrounding a flat bottom garnished with several rows of transversal scales or plates, sometimes finely

* Placed by Müller, as constituting the family *Echeneidæ*, among the *Anacanths*.

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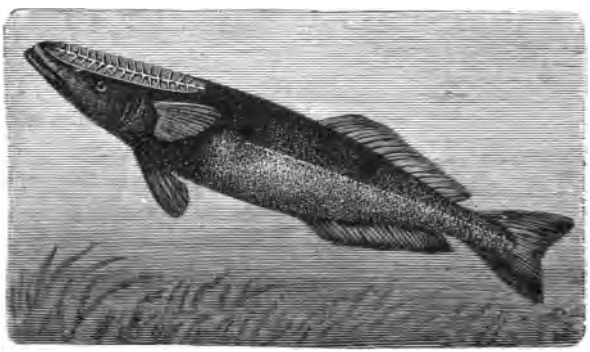
dentilated, according to the species: the number of these plates varies from ten to twenty-seven pairs.

The remoras, and especially the Common Sucker (*Echeneis remora*), so abundant in the Mediterranean, are covered with very minute membraneous scales, which are difficult to detect.

They do not possess the usual air-bladder for purposes of flotation; but, by way of compensation, the Creator has endowed them with a powerful sucker apparatus, by



THE REMORA.

means of which they attach themselves firmly to objects of various kinds, even to other fishes; and thus rise and sink, and move to and fro, without trouble and without fatigue.

The transverse cartilaginous laminæ of which the sucker-disc is composed are moved simultaneously by sets of muscles raising or lowering them; and when these are raised after the broad margin of the disc has been attached to a smooth surface, such as the belly of the shark, a

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vacum is created.* So powerful is this mechanism that considerable weights may be dragged by a remora, which will suffer itself to be torn to pieces rather than let go its hold.

If we have taken the shark as an example, it is, in fact, because we very frequently find the remora attached to that formidable member of the Squalidæ; and it is interesting to see a feeble fish, incapable of offering the slightest resistance to any enemy desirous of attacking it, place itself under the protection, and become the parasite, of the most formidable of aquatic animals; while the latter, in spite of its force and agility, is wholly unable to throw off its uninvited guest.

The adhesive force of the sucker is considerable. During the tempest it clings to the submarine rock, and in this way resists the drifting currents of the deep.

Commerson relates in his manuscripts that, during his voyage round the world with the celebrated Bougainville, having placed his thumb near the sucker of a living remora which he was examining, he experienced so severe a traction that a kind of paralysis seized his finger, which did not pass off until long after he had ceased to touch the fish.

The same naturalist, who is remarkable for the fidelity and conscientiousness of his descriptions, speaks of a fishery he witnessed on the coast of Mozambique, in which the principal part was played by a remora,—the *Echeneis naucrates*. And long before his time, Rondelet the philosopher, one of those men of genius of whom France has a right to be proud, had put on record the following passage,

* Professor Van Benedin has lately ascertained that the common sucking-fish (*Echeneis remora*) feeds upon small fishes, and derives no nourishment from the shark or other animal to which it attaches itself.

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which the majority of naturalists laughed at, until its substantial truthfulness was vindicated by Commerson:—

"This fish (the *Echeneis naucrates*) is of a marvellous nature, like the elephant; for it is docile, and easily tamed, and understands what is said to it, so that the Indians make use of it in fishing.....When they have caught this fish, they keep it and tame it, to assist them in catching the *tiburos* and *manos*, and other large fish with lungs, which swim near the surface of the water. They fasten to it, therefore, a number of small lines, supported by small pieces of cork; they encourage it, and stimulate it by mild words to be courageous in seizing its prey, and drawing it out of the water,—which the fish does. Then they thank and praise it, as if it understood."

The naucrates is now made use of only in hunting the turtle.* A ring, large enough not to inconvenience it, and yet not so large as to slip over the terminal fin of the tail, is fastened round the latter member. To this ring is knotted a long cord; and the remora is then carried, in a bucket of water, on board the fishermen's periagua. Turtles frequently sleep on the surface of the water: no sooner do the fishermen catch sight of one in this helpless condition than they approach as silently as possible, and drop into the sea the captive fish, which straightway endeavours to escape. It is allowed, however, no greater length of cord than is equal to the distance between the fishermen's boat and the turtle. Accordingly the remora, turning hither and thither while stretching its cord, like a dog with his chain, discovers, after awhile, the sleeping turtle, and seeking an asylum under its plastron, clings to it with all its might. The fishermen then haul in the cord

* We believe this statement rests solely on the authority of Commerson.

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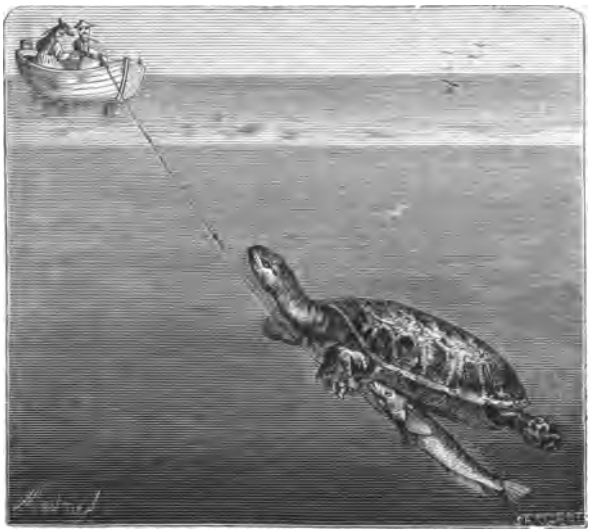
very gently, and with it both remora and turtle. To detach the former, they make it slide along the plastron backward; the laminæ of the disc are voluntarily reversed, and the sucker yields.



FISHING FOR TURTLE WITH THE NAUCRATES.

We have stated, we think, sufficient peculiarities in this little animal to insure that it will not be forgotten by the reader. But with these plain facts the ancients were unable to rest content; they resorted to their favourite habit of exaggeration, and as the remora sometimes attaches itself to a ship's keel, they pretended that it could stop her progress!

On this point Pliny must be regarded as the principal authority, and if it be not true, as Geoffroy Saint-Hilaire

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maintains, that the Roman naturalist wrote his "Natural History" without any attempt to distinguish the fabulous from the authentic, we must confess that he was the most credulous of men.

What is there more powerful, he says, than the sea, the whirlwinds, and the tempests? With what greater auxiliaries is the genius of man gifted than sails and oars? What defies the indescribable force of the alternating ebb and flow which convert the ocean into a river? All these powers, and all others which combine with them, are surpassed by a single and a very tiny fish named *echeneis*..... It is related that, in the battle of Actium, an echeneis arrested the progress of Antony's ship.....More recently, the galley commanded by Caius, on his return from Andura to Antium, was stayed by the exertions of one of these fishes.....Endowed with a most astonishing power, it can arrest the action of justice, extinguish the fires of love, and protect pregnant women!

Even in the Middle Ages these fables were in full vigour, and the poet Du Bartas, in relating them, tells us that—

> La rémore, fichant son débile museau
> Contre le moîte bord du tempeste vaisseau,
> L'arreste tout d'un coup au milieu d'une flotte.
>
> The sucker, darting forth its feeble snout
> Against the side of vessel tempest-tost,
> In the mid-flood delays its onward course.

And elsewhere, he again returns to the fiction of its immense strength, and interrogates the Remora as follows:—

> Dy nous en quel endroit, ô Remore, tu caches,
> L'ancre qui tout d'un coup bride les mouvements
> D'un vaisseau combattu de tous les éléments.
>
> Tell us, O Remŏra! where thou dost hide
> The anchor which can suddenly control
> The movement of a bark, when struggling hard
> With all the elements?

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We may well wonder what must have been the gullibility of the popular mind, when men of science yielded credence to such absurdities!

THE FLYING-FISH.

We cannot do better than begin our account of the Flying-fish with a quotation from the brilliant though somewhat artificial poetry of Moore. He says:—

> "When I have seen thy snowy wing
> O'er the blue wave at evening spring,
> And give those scales of silver white
> So gaily to the evening light,
> As if thy frame were forced to rise,
> And live amid the glorious skies,—
> Oh! it has made me proudly feel
> How like thy wing's impatient zeal
> Is the pure soul, that scorns to rest
> Upon the world's ignoble breast,
> But takes the plume that God has given,
> And rises into light and heaven!
> But when I see that wing so bright
> Grow languid with a moment's flight,
> Attempt the paths of air in vain,
> And sink into the waves again;
> Alas! the flattering pride is o'er:
> Like thee, awhile, the soul may soar;
> But erring man must blush to think,
> Like thee, again, the soul may sink."

The poet has here drawn to some extent upon his imagination; but then it is the function of poetry to represent nature in the colours which it assumes to the vision of genius. When a critic complained, in reference to one of Turner's magically painted landscapes, that he had never seen anything like it in all *his* observations of the material world, the great artist drily answered, "No, sir, you have never seen anything like it; but don't you wish you could?" The want of truth was not in the picture, but in the critic's eye—which lacked the "faculty of seeing," and was unable to discern the mysterious lights and shadows, and the exquisite forms, which the artist's keener and more

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powerful insight quickly detected. And so, the poet's flying-fish are something more than the matter-of-fact creatures with which the mariner makes acquaintance. The former may spring at evening over the azure wave, and display their snowy wing to the rays of the setting sun; their flight may be strong and swift; but the flying-fish of the naturalist and the voyager are capable of no such achievements.

For the truth is, that the so-called flying-fish do not positively and really *fly*—that is, they do not employ their immense fins in the same way that birds use their wings; but they leap out of the water, and by means of their parachute-like fins sustain themselves for a brief period without falling.

There are numerous kinds of flying-fish, belonging to two families, the *Scomberesocidæ* and *Sclerogenidæ;* the former limited to the family *Exocœti*, the latter known as the *Flying Gurnards.*

The ancients had observed these animals, and Aristotle rightly remarked that the noise which they produce when they leap cannot be called *a voice*, inasmuch as the sound is due simply to the vibration of the fins in the air, and does not proceed from the throat.

The ancients knew the species now called the *Exocœtus volitans*, or Sea-Falcon, and the *Trigla pini*, or Red Gurnard.

The most widely spread of all is the *Exocœtus volitans*, which inhabits the Mediterranean, the Baltic, and the Pacific Ocean, but is specially common between the Tropics.

It is a fine fish, shining with a silvery splendour, relieved by the azure which decorates its head, back, and sides, and by the intense blue of its tail and of its dorsal fin.

In the *Trigla pini*, rose-red prevails in the upper part,

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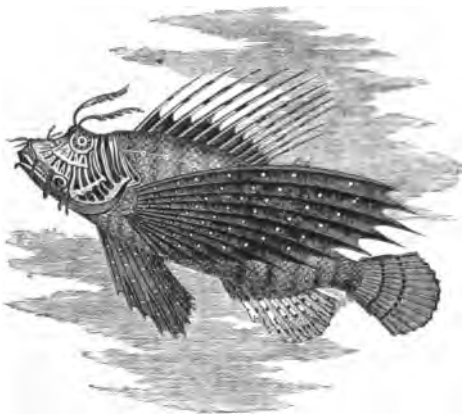
and often fine black, blue, or yellow spots may be noticed on its pectorals. The lateral line is set all along with spines or bristles. It occurs in the Atlantic and the Mediterranean. Its flesh is hard and dry.

The Sapphirine Gurnard (*Trigla Hirundo*), or Sea-Swallow, which latter name it still bears on the Mediterranean shores, is not less splendid than the two fish of



EXOCÆTUS VOLITANS.

which I have just spoken. The back is red, the head violet, the primary fins of the back and tail are a celestial blue; the second dorsal fin is green; the large pectoral fins are of an olive-green, with round sapphire blue spots; lastly, the eye is a blood-red. Can you think of a finer combination of colours? Did the most splendid butterfly ever display to your admiring eye hues more vivid, more beautiful, and more varied?

But of what service to the flying-fish is this exquisite

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decoration? Dull, inconspicuous colours would enable them perhaps to avoid the voracious maw of the bonitos and a thousand other enemies, to which their splendour

FLYING-FISH PURSUED BY DOLPHINS.

does but betray them. It is true they have wings with which to attempt their escape: but, in the first place, their flight is of short dùration, and their assailants lie in wait for the unfortunate victims, until the drying-up of their fins compels them to return to their natal element and regain their strength; secondly, in the very air they are liable to the attacks of the albatross, the frigate-bird, and other "ocean-fowl."

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The condition of the flying-fish, therefore, appears singularly unhappy; incessantly pursued, incessantly threatened in their precarious existence, they can nowhere find a secure asylum, and can neither fly well enough to avoid the bird, nor swim with sufficient strength to escape the fish.

Often they may be seen skimming the surface of the water in short quick flights, like aquatic swallows, speeding in a body from some dangerous foe; and it not infrequently happens that in these excursions they fall upon the deck of passing ships. The sailors pick them up, cook them, and eat them, though their flesh is very dry and not pleasantly flavoured; but then it is such a delightful change at sea to escape from the monotony of salted provisions. And it is thus the poor flying-fish are taught,—

> à leurs dépens
> Que l'on ne doit jamais avoir de confiance
> En ceux qui sont mangeurs de gens....
>
> At their sore cost,
> That confidence should ne'er be placed in those
> Whose habits are carnivorous;

though, after all, they may console themselves with the reflection that,—

> Qu'importe qui vous mange, homme ou loup? toute panse
> Me paraît une à cet égard:
>
> Little it matters who devours one up,
> Or man or wolf; in this respect, at least,
> Each paunch is equal!

THE SUN-FISH—THE MOON-FISH.

The *Orthagoriscus* is a fish whose body is laterally flattened,—so flattened and rounded in its vertical contour, that if you look at one only of its sides you see nothing but a kind of disc. Hence its two species are respectively called the Sun-fish (*Orthagoriscus mola*) and Moon-fish (*Tetrodon mola*).

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It is found in every sea, from the waters of the Cape of Good Hope to the Arctic Ocean.

During the day it is silvery and shining; during the night phosphorescent. Lacépède affirms that it attains a length of thirteen feet; Borlase speaks of one caught in 1735, on the coast of Ireland, as twenty-six to twenty-eight feet in length. Obviously, these statements are inexact, and must have arisen in the sun-fish having been confounded with some other and larger genus. The largest of the *Orthagorisci* do not exceed five or six feet.

Our sun-fish tears the nets extended to catch the bonitos, and is frequently entangled and caught in the meshes. It is but a sorry spoil! Nothing but the liver is eatable; the remainder is fit only to throw away; for its flesh is unpleasant, not alone from its viscous, glutinous nature, but also from its rankness of smell. The liver, however, yields a large quantity of oil, which is in good repute for external application, and for illuminating purposes.

The ancients called it the *hog-fish;* but it bears not the slightest resemblance that I can see to the precious but dirty domestic animal from which we derive so many advantages, and whose savoury flesh, whether as ham, bacon, or pork, is so highly esteemed by the epicure and the common people.

All the moon-fish are not so flat and smooth as the orthagoriscus; most of them, on the contrary, have a well-defined circular form, and are covered with numerous tiny triangular prickles. Their mouth, as round as a cherry, has four teeth, or rather two bifurcated prolongations of the jaws. These fish possess the singular quality of swelling themselves out like balloons by swallowing the atmospheric air, and, in this way, distending a kind

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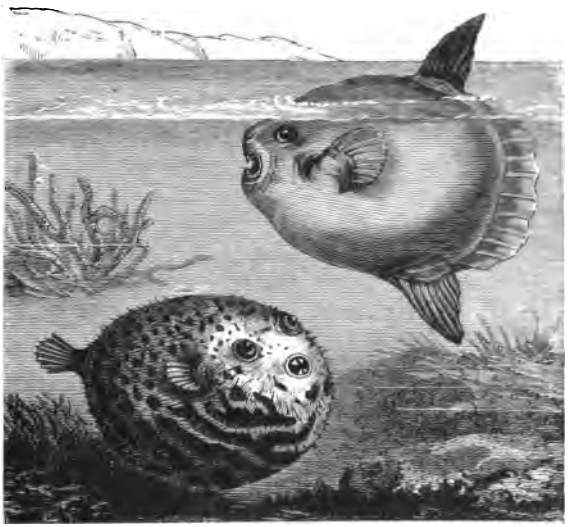
of crop or craw, with very elastic sides, which fills the entire inside of their body. They then become nearly globular, as shown in our Engraving; their spines stand



THE SUN-FISH.—THE MOON-FISH.

erect on the dilated skin; and they float on the surface of the waves as unseizable as a chestnut husk. Their flesh, and, it is said, the points of their spines, are venomous.

THE HAMMER-HEADED SHARK.

The Hammer-head, or Hammer-headed Shark,* is a genus of fishes of the great *Squalidæ* family. Its scientific name is *Zygæna malleus*.

* Also called the Balance, and the Jew fish, the latter in allusion to a supposed resemblance to the head-dress worn by the Jews at Marseilles.

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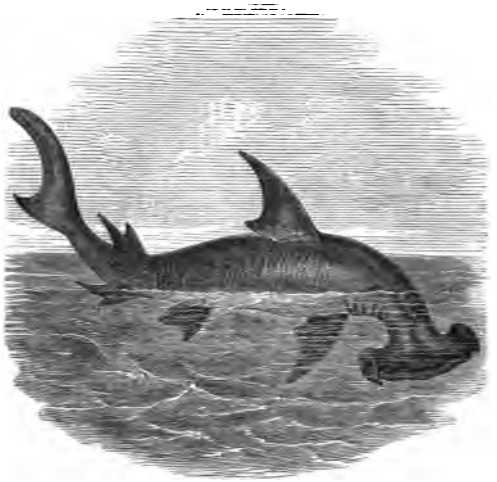
The conformation of this fish is certainly very extraordinary. Its head is of unusual dimensions, and extends on either side of the neck like the horizontal bar of a T. It has been compared, therefore, to the iron head of a hammer, of which its body represents the



THE HAMMER-HEADED SHARK.

handle; and we must confess that the comparison is not without justice.

The front part of this curious head, thus extended right and left, is slightly convex. An eye is placed on either side at the extremity; a large and prominent eye, the iris of a bluish-gray, which, when the animal is strongly excited, changes into a blood-red.

Underneath the head, near the neck, yawns the great mouth, semicircular as in all the Squalidæ, and armed in

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each jaw with three or four rows of huge teeth, shaped like the iron head of an arrow.

The elongated body is eight or nine feet long; its colour is a slaty-gray. The skin is finely granulated.

The hammer-head abounds in the waters of Japan. The inhabitants name it *Simoksoka;* and, during the winter, wage a desperate war against it. Its tough flesh is eaten only by the common people.

It is bold, voracious, sanguinary; and if its strength were on a par with its instincts, it would far surpass the shark—which, by the way, it does not fear to attack—in voracity. We use this word intentionally, for it seems to us that if a cat playing with a captured mouse is rightly called *ferocious*, the shark, killing animals to eat them, is only *voracious*, since it is not its object to torture its victims, but to assuage its hunger.

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CHAPTER III.

THE SHARK.

DESCRIPTION OF THE SHARK—ITS MOUTH, AND SYSTEM OF DENTITION.

THE Shark! how many gloomy memories, how many horrible legends, does this single name recall! It seems as if one heard the agonizing cries of its unfortunate victims; we figure to ourselves the "tiger of the sea," as it has been not inaptly called, swimming in an ocean of blood, threatening with its frightful jaws the poor wretches whom the terror of it paralyzes, disporting itself in the midst of still palpitating limbs, and corpses still warm,—conceiving in our excited imagination the repulsive idea of a very demon of carnage!

Formerly, all the sharks were confounded together in a single genus, but it is now known that there are several distinct species; only, one of these is more widely distributed and better known than the others. And it is from this well-defined type that we shall describe the *Squalidæ*.

The shark's body is greatly elongated. The best-known species is fully thirty-two feet long; another, of

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which we know but the fossil remains, must have been seventy-four feet long. Its back and sides are of an ashy brown, its belly white. Its skin, covered all over with small closely-set tubercles, is excessively hard. The eyes are small and nearly round; the iris, of a golden green, and the eyeball blue. Its well-shaped nostrils are exceedingly sensitive, and they detect with ease the slightest scent. Very probably it is by means of these organs that it steers its course; for its power of smell, much more perfect than

THE SHARK.

its capacity of sight, must be of the greatest utility to it. On either side of the neck are five slits, the openings through which the water penetrates into the branchiæ, or respiratory organs.

But what is specially remarkable in the shark is its mouth. Of an immense size, it is situated on the under surface of the fish, beneath the head. When closed, it seems like a semicircular slit; open, it forms a nearly perfect circle.

In a shark thirty feet long, the circumference of the

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mouth is nearly seven feet, and its diameter is two and a half feet! The size of the throat is proportionate; a man might easily glide into this pit without touching even its sides!

The jaws are furnished with flat, triangular teeth, finely serrated along the edges, sharp, and coated with beautiful white ivory. In its youth the animal has but a single row; but with age their number increases, and when it is full-grown it possesses six rows in the upper as well as in the lower jaw.

But this is not all; these teeth are movable. They are connected with divers muscles, by the aid of which the shark can move them, lowering or elevating them, in a greater or lesser number, according to its needs.

Finally, as they are very fragile, others grow up in their place when they are broken; just as it is with children, who usually have what are called their "second teeth."

HOW THE SHARKS HAVE A GASTRONOMICAL PREFERENCE FOR CERTAIN PEOPLE—AN INFAMOUS NEGRO-CAPTAIN.

The Père Labat, who, in his narrative of a voyage to the West Indies, makes some very hazardous assertions in Natural History, pretends that the sharks prefer the flesh of the blacks to that of the whites, because it is more odorous and savoury, and that of the English to the French. We English, however, are not at all enchanted by the preference thus accorded us over our former rivals.

Yet it is certain that this belief in the peculiar partiality of the sharks was formerly very general among Europeans residing in hot countries; and that when they wished to bathe without danger, they took care to surround themselves with a circle of black slaves. A shark arriving,

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these poor wretches were torn to pieces and devoured, while their master took advantage of the monster's occupation to seek safety in flight.

In the dark days, when numerous ships were regularly engaged in the accursed slave-trade, the slave-ships were always followed by sharks, to seize upon the carcasses which were daily thrown overboard. One day, the captain of a slaver, growing weary of the long voyage, formed the idea of breaking the monotony with one of those terrible sports which nothing but the "blood-boltered" imagination of such wretched scoundrels could have conceived. Causing one of the negroes who composed the living cargo to be seized, he bound him with a rope under his armpits, and ordered him to be suspended to the extremity of a yard, at twenty feet above the surface of the sea.

Immediately some of the sharks familiar with the ship darted underneath the slave. The lookers-on could see them turn, and swim rapidly, greedily eying the prey intended for them, who, in a frenzy of agony, implored the tyrant's pity. Then the sharks began to leap, and at each leap rose higher and drew nearer to the sufferer. A cry was heard—another—the sharks had reached the man, and began to tear him in pieces. Then the negro-captain could enjoy all the pleasure which he had promised to himself: in the wake of the ship extended a bloody furrow, and, bit by bit, limb by limb, the negro, whom excess of pain had rendered dumb, and whose convulsed countenance indicated his torture, was literally devoured alive.

Let us not linger over so dark and dread a story.

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PHOSPHORESCENCE OF THE SHARK—ANOTHER SLAVER-CAPTAIN.

It is not only when the sun shines that the mariner can see the sharks disporting around him, as if to remind him incessantly of the fate which awaits him if he falls into the abyss. By night, a kind of mucus which percolates through the skin of the fish renders it phosphorescent. It shines with a greenish, sepulchral lustre. But, if we may believe some authorities, this lustre is not always uniform.

An English frigate, the *Sea-Horse*, was sailing along the coast of Africa, in pursuit of a celebrated slave-ship, the *Vulture*, commanded by a blood-thirsty wretch named the "Moloch." Every effort to seize the pirate had failed, when the *Sea-Horse* laid-to off an apparently desert country, and sent ashore, for exploring purposes, a boat under the charge of one of her midshipmen. The young officer was imprudent enough to permit his men to stray; none returned, and night came before he could comprehend the cause of their strange absence. The mystery was soon cleared up. The moon arose, and bathed the landscape in a pale light, when the midshipman's dog, the sole companion who had remained with him since the morning, began to bark. Some few moments afterwards, several men suddenly surrounded him, and after binding his wrists, carried him off. He was a prisoner in the hands of the crew of the "Moloch," whose ship was anchored not far off, in a small cove, not visible out at sea.

While, reflecting on the error he had committed, the young officer walked silently towards the boat intended to put him on board the *Vulture*, a monstrous shark passed

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near the shore. Its fin alone was luminous, the remainder of the body seemed black as night. "Here is our sentinel," cried one of the sailors; "he always follows the *Vulture*."

At length he arrived on board the slaver. In the stow-sheets of the vessel, a negro-woman, very thinly clad, was kneeling by the side of a thin, feeble, and naked child about fourteen years old. The poor girl uttered at intervals a smothered moan, as if she dared not give free expression to her sufferings. Her frame, so attenuated by fever that it was little more than a skeleton, trembled like a leaf. Her unhappy mother,—for evidently she *was* her mother,—looked upon her with an air of sadness and despair. One of the crew, less hard-hearted than his comrades, had undoubtedly permitted the woman to bring her sick child into the open air. The remainder of the slaves were huddled together at the bottom of the hold, in a pestilential atmosphere.

The arrival of the English midshipman was immediately made known to the captain.

"Moloch" soon appeared upon deck. He was a tall, strong man, with a countenance exhibiting great determination, with black hair and whiskers, and a dignified bearing well calculated to impose upon his crew. His limbs showed a Herculean degree of strength, and a prodigious activity. His deep dark eye seemed to penetrate to your very soul. It was the eye of a bird of prey, and flashed beneath thick bristling eyebrows which, joining one another near the middle, formed an uninterrupted line along the lower portion of the forehead. Ferocious as was his aspect, it was easy to distinguish in his features the signs of an unusual capacity

The poor negress concealed herself at his approach,

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and endeavoured to hide her daughter from his sight. But his lynx-eyes darted in a moment on the miserable couple. With a loud voice he summoned a robust negro who stood at hand.

"Cæsar, you will have to settle accounts with me directly, for allowing these beasts to mount upon deck; see that they go below at once—at once!"

As he spoke, he kicked the child with his foot. In vain the poor mother attempted to lift her up. The right thigh, terribly swollen, and evidently broken, yielded beneath the girl's weight; she fell on the deck with a low shriek of pain.

"Ah, what is this?" cried "Moloch;" "we have no room here for the sick. My ship is no hospital!"

And seizing by the broken leg the poor child, who trembled in every limb, he hurled her overboard, apparently without effort!

It was a solemn, a terrible moment.

The white fantastic brightness of which we have spoken came gliding over the motionless surface of the deep. Suddenly a significant sound announced that the shark was at hand.

The spectators, horror-stricken, perceived a movement on the moonlit waters; then there was a sinister, shuddering plunge; then—nothing!

Before the shriek of the bereaved mother had died away on the breeze, her child had ceased to be a slave!

THE SHARK-FISHERY.

Of all marine animals, the shark you would suppose to be, perhaps, the most difficult to capture, on account of the rapidity of its movements, the hardness of its skin,

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its size, its formidable jaws, and not less formidable tail. It knows its strength, and the most violent noises do not terrify it.

Thus, during the American war, on the 12th of April 1782, Admiral Rodney's fleet fell in with and totally defeated the French fleet, capturing six ships, three thousand men, and taking prisoner the French admiral. While the fierce battle raged, in spite of the roar of the cannon, and the hissing and splashing of balls and shells in the water, a great number of sharks continuously swam around the two fleets, and under the very batteries of the vessels. One ship, the *Censeur*, having caught fire, several of her crew who attempted to save themselves by swimming were seized and devoured by the monsters.

And yet it is pretended that if you only stir the waters a little, or hurl into them a log of wood, the shark will take to flight!

Thanks to the voracity of this animal, the fishery is not difficult. It is caught by the line, like modest gudgeons. The hook made use of is very large and strong. The men disguise it by a great slice of pork or lard, attach it to the end of a cord, whose other end is firmly secured on board the vessel, and allow it to dangle over the side near the surface of the water. The shark speedily approaches; it scents the bait, sometimes snaps it at once, but sometimes swims round and round examining it. The rope is then run out and hauled in again, so as to stimulate the animal's gluttony. At length its appetite prevails over its prudence; it throws itself upon the bait, and, turning on one side, swallows it at a single gulp. Its captors immediately give a twist to the rope which they hold in their hands, so as to fix the hook thoroughly in

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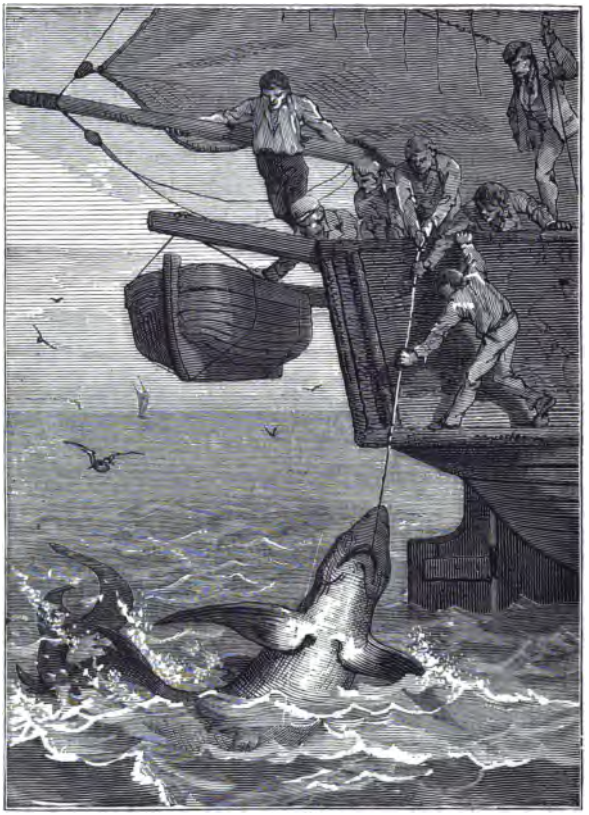

CAPTURE OF A SHARK.

the palate or stomach of the shark, which begins to recede, and endeavours to get rid of it, lashing the sea into foam with its tremendous tail, whose slightest blow would suffice to knock down an ox.

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The object of the seamen is to weary out the animal by alternately lengthening and shortening the rope. When exhausted, it remains motionless; it is then drawn alongside and hauled upon deck, where it is slain with repeated blows from an axe, the precaution being taken to hew off, in the first place, its tail.

In its stomach are frequently found entire animals, seals, fishes, and even human remains.

The number of tragedies of which it has been the hero is infinite, and a folio might be written in recital of its crimes. Of their nature the reader will already have formed some conception, yet we are unable to pass to another subject until we have related, as briefly as possible, an incident of singular pathos.

On his return from a long voyage, Mr. Duncan, an officer on board a large trader, learned that death had struck down his beloved wife. A child remained to him; one who, up to that melancholy event, had known only the gentle reprimands of a loving mother. He was a boy of twelve years old, loving and delicate, accustomed to have all his own way, to see his caprices satisfied almost before he could express them. In her fond anxiety, his mother had followed him everywhere; if he bathed, she watched him from the shore, and when he attempted to swim, applauded his first success. His father, desirous that he should enter upon the career which he himself had followed, embarked him on board his own ship as a cabin-boy. Everybody knows how painful is the life of these poor lads, the servants of the lowest of the seamen, the object of their incessant brutalities, their jests, and their blows. Mr. Duncan would not suffer his son to escape any of these trials. Having

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himself passed through every position before he became captain, he could not conceive why any other, even his own son, should escape the bitternesses which had shortened his own youth. Hard and brutal, he never spoke but in a tone of imperious command, passing rapidly from threats to their execution. It was not that he was wicked at heart; in truth, he adored his son; but he regarded his affection as a weakness, and, lest he should guess his secret, was more severe towards him than towards the commonest seaman of his crew.

They were off Laretto, on the coast of Mexico, and the captain, leaning against the netting, was examining the chart, when, by some accidental movement, the latter slipped from his hands and fell into the water.

The cabin-boy, close at hand, saw the paper whirl through the air, and then tossed to and fro by the waves, but did not stir. Perhaps he was dreaming of his mother, remembering her caresses, her gentle reproaches, her loving care.

"Overboard with you and bring me my chart," cried the captain; and as the lad gazed at the sea without obeying him, he caught him up in his arms and threw him overboard. The boy soon got hold of the chart, and was swimming vigorously towards the ship, when a shark, scenting a possible prey, showed his fins at a very short distance.

At this sight Mr. Duncan grew pale, and hastily flung overboard a rope, to which the cabin-boy clung desperately. Already he was out of the water; already his feeble arms had nearly reached the bulwark; his father caught him by the hand; a second more, and he would be saved! But no! the shark made a sudden leap; a rattle resounded

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in the air; and the unfortunate captain clasped only the mutilated body of his child!

GENERAL HABITAT OF THE SHARK—ITS COMBATS WITH THE PEARL-FISHERS.

Sharks are met with in every sea; they are rare, however, in European waters, while they are very common in the neighbourhood of the Bermudas, on the coasts of Ceylon, Guinea, Cayenne, California, and in the bay of New York.

To the pearl-fisher, whose painful and laborious occupation compels him to dive incessantly to great depths in the parts most frequented by these fish, they not unnaturally represent the very genius of evil. It is to them, before all, that the French name of the shark, *le requin*, would seem appropriate, for its appearance recalls but too impressively the *requiem*, the death-song, or, in other words, everlasting repose. The number of divers who fall victims to them is very great; and even in the fishing-grounds least frequented by these monsters, not a season passes which some catastrophe does not sadden.

In these encounters the diver is generally devoured, or dies in consequence of the mutilation he has undergone; but it is also no uncommon occurrence for him, with the assistance of a single wooden pole, two feet long, sharpened and burned at one extremity, to beat away and put to flight his enemy. The Mexican diver is never without his weapon.

Off the coast of Ceylon, on the contrary, the diver carries with him into the deep nothing but his net.

In 1823, a robust Malay, forty-five years old, had found his way to Ceylon, accompanied by his son, to engage

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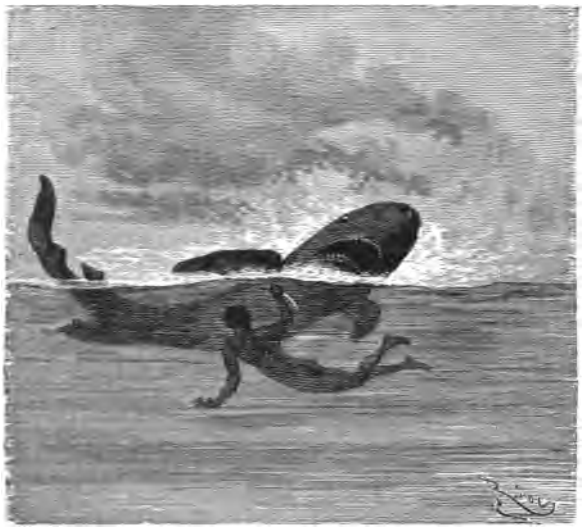
themselves as divers. Hanging over the gunwale of the boat, one day, he was watching the youth ascend from the ocean depths; when suddenly, and close at hand, an enormous shark appeared, swimming with great rapidity. In the twinkling of an eye the father threw himself into the water, and swam towards his child; but the features of the latter were convulsed with pain; the sea was stained with his blood; the shark had bitten off a leg.



THE SHARK AND THE MALAY DIVER.

At this sight, a keen desire of vengeance arose in the heart of the unfortunate Malay. Without pausing to reflect on the extent of the danger, he resolved that the life of the monster should pay for his son's horrible wound. He grasped a knife between his teeth; then, floating on

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the surface of the water, watched till the dorsal fin of the shark appeared above the wave; then at that moment he dived.....

Seconds passed by—as long as hours to his son, who now, though too late, had found a secure asylum; and to his comrades, who endeavoured in great agony to divine his fate. At length, afar off, a violent eddying, and some tracks of blood, indicated that a submarine combat was taking place. The heroic diver came to the surface to breathe, but dexterously avoided his enemy, who was rapidly losing blood from several wounds; then he dived again, and attacked him with fresh blows, slashing desperately at his ears, his belly, his sides—everywhere. For upwards of a quarter of an hour the struggle lasted; at length, exhausted but victorious, the Malay regained his boat, driving before him the shark's carcass.

Need we repeat the stories of bathers surprised and massacred; of sailors cut in two while hauling themselves on board their ship with the help of a rope; of seamen seized while executing some manœuvre, and devoured before any one could hasten to their assistance; of the shipwrecked, tossed to and fro upon their hastily constructed rafts, and doomed every day to see one of their comrades carried off by the sharks which follow relentlessly in their track?

Need we repeat the story of the Campeachy fisherman, who, having plundered and flung into the sea for concealment the sacred ornaments of a church, when diving to recover them was overtaken by one of these sea-tigers, and expiated his sacrilege in its jaws?

We prefer to leave the reader to his own recollections of

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the numerous pathetic stories he cannot but have read, and to conclude the present chapter with a few words on the usefulness of, and the superstitions connected with, the shark.

THE USES TO WHICH SHARKS ARE CONVERTED.

It is some satisfaction to reflect that we make a certain amount of profit out of the shark: the Norwegians eat its flesh, which is sold also in the Java market. Its skin is an article of commerce, under the very unsuitable name of *sea-dog's-skin*.

Akyab, a maritime town in British India, carries on an important traffic in sharks' fins, a dainty greatly esteemed by the Chinese, whose tastes in this respect differ greatly from those of Europeans.

On the coasts of Iceland are caught in great numbers the large shark vulgarly called *kakal* (*Scymnus microcephalus*). In 1862, fifty-one Icelandic boats, and nearly as many Danish, were equipped for this fishery. The former made 5060, and the latter 5810 barrels of sharks' livers. These livers—to which we must add 750 barrels collected by the cod-fishers—these livers were duly converted into oil at Reikiavik. It is calculated that three barrels of liver yield two barrels of oil.

At Malabar this fishery is also conducted on a tolerably large scale. Shark's oil in the pharmacopœias is often confused with cod-liver oil, and is used for the same purposes. In the original markets it is worth fivepence to sixpence per bottle. Sometimes the liver of a single shark suffices to fill a tun, but sometimes it takes not less than six livers. The average is *four*. Therefore, to obtain 11,620 barrels of liver, the fishermen must kill 46,480 sharks yearly; a fact which illustrates very strongly

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the abundance of these voracious fish in the Eastern seas.

SUPERSTITIONS CONCERNING THE SHARK.

Like all remarkable animals, the shark is the object of numerous superstitions. Formerly the goldsmiths inserted its teeth in delicately carved frameworks of gold; and these amulets, it was believed, acted as a safeguard against terror and toothache. Its brain and its teeth, dried and reduced to powder, were employed by druggists medicinally.

The negroes still hang round their neck a collar of sharks' teeth polished.

The history of the shark is not more free than that of other monsters from exaggeration. The Greeks pretended that one of their demigods had lived three days in a shark's stomach. On making the autopsy of one of these animals, at Marseilles, according to an ancient tradition, a man in armour, and intact, was discovered in its viscera! Another time, a *horse* was found in a shark's stomach. Randoles relates that a man and his dog sank intact into the body of a shark after having passed through its cavernous mouth!

If we might believe Plutarch, "the shark yields to no living creature in paternal affection, tenderness, and amiability! The parents dispute with each other who shall feed their young, and instruct them to swim. If any danger threaten the defenceless offspring, he finds a secure asylum in the *protecting jaws* of one or other of his parents, whence he emerges on the waters recovering their usual tranquillity."

Let us congratulate ourselves that the great historian was a more careful student of men than of fishes!

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It is useless to refute all these fables; but the "Travellers' Tales" respecting the worship offered to the shark by certain tribes upon the African coast must not be included in the same category.

They call it *joujou*, pretend that it is sagacious and agreeable, and consider it a crime to kill it. He who kills a joujou, they say, is damned; but he whom a joujou eats is comfortable! *Chacun à son goût.*

Three or four times a year they go forth in their barks, and fling to it goats, poultry, and the like, accompanying these offerings with ceremonies intended to conciliate the patronage of the sharks. These festivals are called *javjav.*

Unfortunately, these are not the only sacrifices offered up to their ferocious divinity.

On the day of his birth they select some unfortunate child, whom, up to the age of ten years, they load with the most prodigal affection. Then, one day, the priests seize upon him, cover him with flowers, and, followed by the whole tribe, make towards the shore.

At a part of the beach which is submerged by every tide a post is erected, with one extremity sunk deeply into the sand. Towards this point the child is dragged; the post is the altar where the horrible sacrifice is accomplished of which he is the victim.

They bind him to it; and when the tide begins to flow, they all withdraw, the priests intoning their sacred chants, and accompanying themselves on boisterous instruments. The child's shrieks are drowned in the uproar. Soon the wave bathes his feet; the sea still rises, and the waves dash against his feeble frame. Then you may see a legion of sharks approaching with fiery eyes. The child cries and struggles, but fanaticism has closed the ears and petrified

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the hearts of the friends and kinsmen whom he invokes. The "sea-tigers" surround their victim, who vainly breaks his bonds and climbs to the summit of the post. A wave higher than the rest approaches; it sweeps over the heathen memorial; and when it falls back again, only that dreary altar and a streak or two of blood are visible to the eye.

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Book Third.

MARINE REPTILES.

CHAPTER I.

THE TURTLES (CHELONIADÆ).

VARIOUS KINDS OF TURTLES—A DESCRIPTION—THE TURTLE AND HER YOUNG—THEIR HABITS.

EVERYBODY has seen *Turtles*, and no one can be ignorant that these curious reptiles are inclosed in a kind of osseous or horny framework or case, consisting of two parts: an upper, or *carapace*, and a lower, or *plastron;* both being due to a transformation—the one of the sides, which seem to have been flattened and soldered together; the other of the sternum.

Certain species possess the faculty of retracting their head and feet when they are alarmed, and sheltering them under this defensive armour.

A mountaineer from Central France, according to

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Moquin Tandon, met one day at his village festival with an Algerine merchant, who drew his attention to about half a hundred common turtles:—

"At what price do you sell those funny little beasts?"

"At thirty sous a piece, sir; not one sou less."

"Thirty sous! it is very dear for a kind of frog. Well, for how much will you sell one without its box?"

The reader remembers the legend of Chelonia: she alone of all the nymphs was not invited to the bridal of Zeus and Hera, because she had amused herself at the cost of the immortal couple. But Hera was not contented with this vengeance: she bade Mercury throw the witty but unwise maiden into the sea, with her house, and metamorphosing her into a turtle, condemned her to carry it on her back in eternal silence. For this reason the ancients called the turtle *Chelonia*.

There are land-turtles, marsh-turtles, river-turtles, sea-turtles. The last alone will engage our attention on the present occasion. And their dimensions well deserve that we should classify them among the Monsters of the Deep, to say nothing of their curious organization.

The largest are the Loggerhead (*Caouana*), the Green Turtle (*Chelonia*), the Hawkbill (*Carettes*), and the Coriaceous Turtle (*Sphargis*).

Of these four, the smallest is the *Hawkbill*. It is found in the Indian seas and on the American coasts. In length, from head to tail, its measurement does not exceed two feet and a half; but its carapace, streaked with brown, on a yellow and tawny ground, is very beautiful: this it is which furnishes *tortoiseshell*, so largely used in many articles of luxury and the toilette.

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The *Coriaceous* and the *Green Turtle* are nearly of the same dimensions, both being about six and a half feet long: the carapace of the former consists of a thick black-brown leather, extended over osseous arcs or ribs; the second boasts a real and unmistakable shell.

It is pretended that Hermes, having found on the sea-shore the empty carapace of a turtle, across which were

THE HAWKBILL TURTLE.

extended some muscular fibres dried up by the sun, drew from those fibres the harmonious sounds which filled his brain with the invention of the lyre.

The Coriaceous Turtle is rare; however, some individuals are occasionally caught in the Mediterranean and the Atlantic.

The Green Turtle (or Midas, or Common) is the most widely distributed of all. It is found in the Indies, America, Madeira, and Oceanica.

Some specimens have been caught in the Channel; as,

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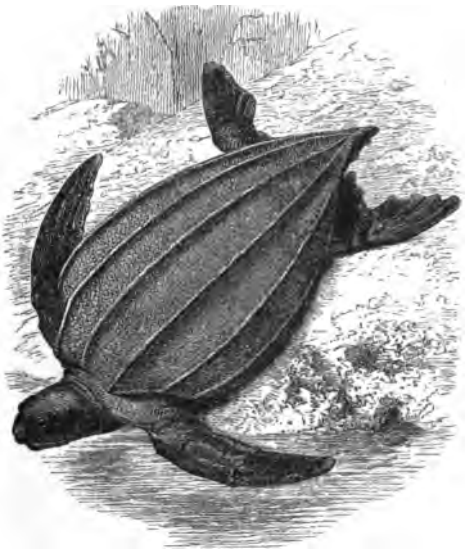
for example, in 1752, at Dieppe, the tide cast into the harbour an individual measuring six feet and a half; and,



THE CORIACEOUS TURTLE.

in 1754, another, eight feet long, was captured near the island of Ré.

It is recorded that, on the 24th of July, in this year, some fishermen caught and offered for sale to the monks of Lonvana, near Vannes, an enormous living turtle. It weighed from seven to eight hundred pounds: the head, twenty-five pounds; and the fins, fifty-two pounds. "The liver alone proved of sufficient size to dine the whole community four times; and thirty persons—workmen as well as domestics—made a good meal off it. Thus it supplied

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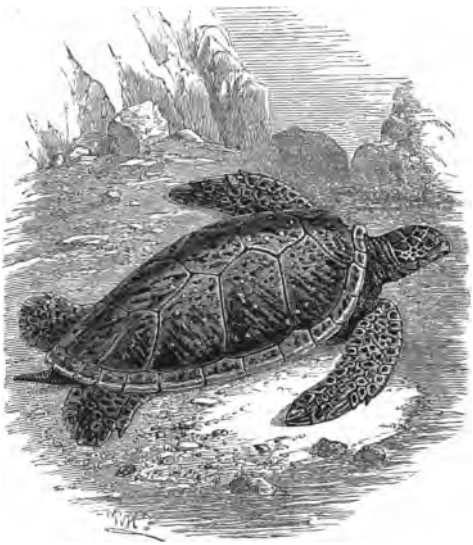
the wants of upwards of one hundred people.....From the snout to the tip of the tail it measured fully eight feet and some inches. The shell, which the community preserved, was five feet in length.....This turtle was caught in the Strait (or Passage) of Antioch, in the latitude of the isle of Ré."



THE GREEN TURTLE.

Lastly, the giant of this species of animals is the Caouana, which is common enough in the Red Sea, the Mediterranean, and the archipelagoes of Madagascar and the Maldives. The carapace alone is ordinarily four feet long, and the animal weighs upwards of four hundredweight.

The sea-turtles are all amphibious: they come to the

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surface of the wave to breathe, and lay their eggs ashore. They are generally herbivorous, feeding upon the algæ and fucus; but sometimes they regale themselves upon molluscs and zoophytes.

They are found at a great distance from land, especially when it is not the season of incubation; for at that epoch they approach the shore by night, and dig in the sand (every year in the same place) a hole, in which they deposit their eggs, afterwards covering them with sand in a very dexterous manner. The green turtle lays one hundred and fifty eggs; the coriaceous, from two hundred to two hundred and sixty.

These eggs are soft and spherical, and covered with a kind of white leathery skin. Those of the green turtle are as large as hens' eggs; those of the caretta (the most valued among gourmands) are very small.

In fifteen or seventeen days, thanks to the ardour of the sun, the young turtle issues from his shell, and quickly regains the sea, taking by instinct the shortest road thither. Happy one! if he can arrive there safely; for the birds of prey—the carnivora and the reptilia—lie in wait for him, and fling themselves upon the victim as soon as they catch sight of him. Even when he has reached the waves he is not in safety, for the comparative softness of his carapace, his slow movements, his feebleness, make him the easy prey of any fish which chooses to spring upon him.

But by-and-by his defences will be more complete: in addition to the cuirass, which enables him to brave the strength of the strongest, with his fin-like feet he will deal right vigorous blows; and his jaws, close-set with teeth, pinch with a force of which you have no idea.

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He can cut off a finger seized between these shears; and if a stick is thrust into his mouth, he bites it with so much obstinacy, that he will let you carry him away, rather than release his grasp. Therefore, when the poet says,—

"Dans la gueule, en travers on lui passe un bâton.
Serrez bien, dirent-ils, gardez de lâcher prise;
Puis chaque canard prend le bâton par un bout.
La tortue enlevée, on s'étonne partout,
De voir aller en cette guise
L'animal lent et sa maison,"—

it is evident that his fable reposes on an accurate observation of the tenacity of this reptile.

The ancients, ever unable to refrain from mixing up ridiculous legends with the results of their scientific research, maintained, not only that the turtles hatched their eggs during the night, but that they *warmed them with their looks.*

They also asserted, most ridiculously, that the females refused to allow the males to woo them, until the latter had placed—a straw upon their back!

GREAT TURTLES—THEIR DIMENSIONS—THEIR STRENGTH—SUPERSTITIONS ABOUT THEM.

Pliny says (but who will venture to credit all that he says?) that in the Indian seas the natives make use of the carapaces of turtles as boats, and that a single shell formed a sufficient roof for a house.

Dampier tells us that the son of Captain Rogers, a boy of nine years old, sailed about on the open sea in a gigantic turtle-shell.

In the Philippines, according to Carreri, these shells are used as watering-troughs for the buffaloes.

And some voyagers go so far as to assert that they have

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A SAIL IN A TURTLE-SHELL.

met, in the West Indies, with turtles on whose back fourteen men could simultaneously stand upright!

Turtles are the subject of numerous superstitions.

Carreri, who circumnavigated the world in 1696, relates the following singular circumstance, and appears to believe in it:—

"There are some in the Philippines which serve as an antidote, since it has been proved that cups and chaplets made out of their shells break, like glass, when they come into contact with any poison."

In her second voyage, Madame Ida Pfeiffer visited a temple in Java. There, in a vast basin, she saw a very large and entirely white turtle. It was the idol: the natives exhibited towards it the most profound reverence. The obscurity in which the animal is kept may account, perhaps, for the discoloration of its shell. However that may be, the moment Madame Ida Pfeiffer entered, the priests summoned the turtle. The latter, which was quite

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tame, hastened to take, according to custom, its food from their hands; but dived without touching it, and several times repeated the same trick. This was considered a great miracle, and the priests, regarding Madame Pfeiffer as a privileged being, offered her a young turtle, as white as its venerated mother.

It is perhaps to this species of Chelonidæ that we must refer the white animal described so pompously by M. de Thoron under the name of Manta, which that voyager professes to have seen in the Atlantic, near the coasts of South America.

Finally, in one of his incarnations, the Hindu god Vishnu changes himself into a turtle, in order that he may support on his carapace the world, when about to be engulfed in the great ocean, on which, according to the Hindus, he floats.

On land the turtle exhibits great strength, and can easily carry a man upon its back. The Père Labat often amused himself by making use of this curious vehicle.

Dr. Darwin, the illustrious English naturalist, mounted more than once upon a sleeping turtle. On his giving a few smart strokes to the shell, the animal rose, and began to move forward; but our philosopher found it very difficult to preserve his balance on so staggering a steed.

Some years ago, Queen Victoria, having received as a present a great turtle, wished, before sending it to the Royal Zoological Gardens, to exhibit it to the celebrated anatomist, Professor Owen. This great scientific observer was anxious to measure its circumference, and, to do this more conveniently, climbed upon its carapace. Mean-

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while the reptile, asking itself probably what was going on, rose, looked around it with much disquiet, and started off, making as much haste as was possible to its dilatory limbs, and violently shaking off its cavalier, to the great amusement of the Queen and the late Prince Consort, who could not but smile at this novel *Derby*.

In spite of such attempts, we have no reason to suppose that the turtle will ever gain the "blue ribbon of the turf," though, if Leo Africanus may be credited, its march was not always so very slow. In Lybia, according to this author, you may meet with turtles as big as hogsheads. And it happened one day that, having rested himself on one, which was lying still, and which he mistook for a rock, he fell asleep. At night the turtle set off on its journey with so much rapidity, that when the traveller awoke next morning he found himself at a distance of three thousand leagues from the place where he had fallen asleep; "at which he was much astonished."

TO WHAT USES THE TURTLE MAY BE CONVERTED—FOOD—SOUPS—IMPORTANCE OF THE TRAFFIC—THE SHELL.

All who have partaken of it agree in asserting that the turtle is one of the daintiest dishes in the world.

A French writer, who is considered an authority on all gastronomical questions, says:—

"Everything is good to eat in the turtle, except the gall.....In this animal are two 'pope's eyes' of whitish meat, like the 'pope's eyes' of veal. You may roast them, or fry them, or serve them up in *pâtés;* and, in the latter case, they are equally as good as the *pâtés* of Rouen and Pontoise."

The flesh is solid, and in colour holds a medium be-

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tween that of beef and that of veal. Roasts are made of it, ragouts, and stews. The fat, of a light green, is very soft, and of an exquisite taste. The intestines are far superior to those of an ox. The fins are prepared like calves' feet.

"In spite of the poor sauces with which we were provided on board the *Gustavus*," says Dr. Thiercelin, "I ate this meat, for a couple of months, at every meal, without growing weary of it."

The Americans greatly value the turtle, and they call it, not without appropriateness, the *sea-pig*. They use it for a national dish, *boucan;* the name given to turtles when cooked whole in their carapace, and seasoned with citron, cloves, and pimento.

Our aldermen and epicures grudge no expense to procure this important dainty. As they (the turtles) possess a great vitality, the steamers import them in living cargoes. As soon as they are disembarked, they are placed in ponds, and fed with the refuse of vegetables. Unfortunately, they cannot endure the winter cold.

The last time Cuvier was in England, where he received a hearty welcome, he was entertained by one of his hosts with a dish of turtle-soup. The great naturalist was an epicure, and was afterwards accustomed to observe that nothing in England had impressed him so favourably as this inimitable soup.

For edible purposes, it is the green turtle alone which is valued. The greatest market for these animals is that of Martinico. They are brought thither from all the shores of the Mexican Gulf; from Trinidad Island to Vera Cruz, and especially from the Honduras and the Tortugas.

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They are kept in inclosures made of thick poles sunk deep in the mud and sand of the shore, at sufficient intervals to permit of the water entering without the turtle escaping.

Like all other animals of a large size which man is interested in pursuing, the turtle every day becomes rarer.

Samuel Carleton, who discovered the island of Bourbon in 1612, says: "The shallop which was sent on shore found there a prodigious quantity of turtles, each of which was fully a man's burden." In this island turtles are now unknown, and rich merchants import them from the Seychelles.

At the island of Ascension the same condition of things prevails.

At Chesterfield is the Island of Turtles, which the whalers have annually ravaged. It is now nearly exhausted.

Attempts have been made in the Mediterranean to encourage the multiplication of the green turtle, which formerly abounded there. The French Society of Acclimatization encouraged the project, but it does not seem to have succeeded.

The tortoise shell, so much employed in certain kinds of ornamental work, is furnished by the caretta turtle. A single carapace is composed of twelve plates or leaves, of which four large ones weigh, at a maximum, three pounds and a half.

In Europe the first inventor of tortoise-shell work was Carvilini Pollio, a Roman.

Julius Cæsar brought back a great quantity from Alexandria. In the time of Augustus the patricians decorated with it the columns of their palaces.

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The Chinese, and the people of the East generally, have made use of it since a remote antiquity. In commerce there are four varieties, distinguished by their colouring, and of different prices. One (from China) is black, variegated with a very transparent bright yellow; another (from the Seychelles) is thicker, and of a vinous colour; a third (from India or Egypt) is brown, shaded with red, and spotted with red, brown, and yellow; finally, the fourth kind is that furnished by the caouana turtle.

At Nossibé the fishery takes place between September and March; and eighty to one hundred cwt. of shell of superior quality are annually collected, worth on the average twenty-one shillings per pound.

THE TURTLE-FISHERY.

The turtle is pursued by the fishermen in various ways. In the open sea they harpoon it, either with the ordinary harpoon, iron-headed like the lance, or with a simple pike, which sinks deep into the fish, and adheres to it like a nail.

A story is told of an Indian, a native of Martinico, who, having harpooned a turtle, found his canoe dragged onward by it with frightful velocity, until it was capsized. He contrived to right his canoe, but, having lost his knives, could not cut the rope attached to the harpoon. In this way he was dragged along for a day and two nights, until the creature fortunately drove against a reef, and was stranded on it, when the Indian was able to kill it.

In the South Seas skilful divers noiselessly approach the turtle sleeping on the surface of the sea, and as soon as they are within reach, harpoon the animal, or pass a noose around its body. Mr. Coombes saw this process employed by several seamen.

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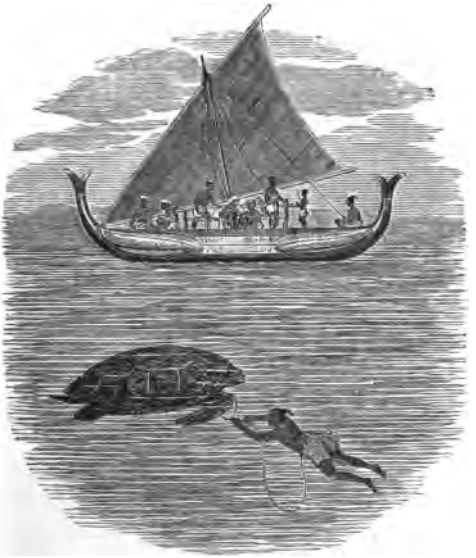
Turtles are also taken by the line; and it is in this way they are caught in the waters of Santa Martha (in South America). And we may refer to the curious Cuban operation of catching them by means of the remora.



TURTLE-HUNTING IN THE SOUTH SEAS.

Dr. Darwin's interesting description of the turtle-fishery may fitly conclude our remarks upon this subject:—

"On the 6th of April I accompanied the captain to the end of the lagoon: the channel meandered in and out of delicately branching coral.

"We saw several turtles pursued by a couple of boats. The shallow water is so limpid that the turtle, which dives and disappears immediately, is nearly always recovered.

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The canoe under sail follows; the boatman, erect in the bow, springs upon the carapace, holds on to the animal's neck with both hands, and suffers himself to be carried forward until he can make himself master of the exhausted turtle.

"It was amusing to see the boats endeavouring to outstrip each other, and the men springing head-foremost into the water in pursuit of their prey. In the archipelago of the Chagos, in the same ocean, the natives, according to Captain Scoresby, employ an odious means of removing the carapace from the living turtle. They cover with burning coal the shell, which crimps up, and then they tear it off with a knife, leaving the animal to regain the sea; where, after a while, the carapace reforms — too thin to be of any use—while the poor creature drags out a sickly and weakly existence after this barbarous execution."

But the turtle are most easily caught when they come ashore at night to lay their eggs.

For this purpose the fishermen extend, parallel to the shore and on the edge of the water, great large-meshed nets, which bar their passage. Into these they plunge their heads and paws, and so entangle themselves that they cannot escape, but are drowned from inability to rise to the surface.

Sailors do not use much ceremony in dealing with them. They keep on the watch about the usual haunts of the turtles, and when one emerges from the water, spring upon it, and turn it over on its back, which effectually prevents it from moving.

Once, on the island of Los Lobos, in 1862, the crew of one of our ships met with a turtle of such a size that it

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TURTLE-HUNTING AT NIGHT.

dragged onwards six men, who could not check its progress; and other sailors were forced to hasten up in order to turn it on its back.

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As the carettas, whose back is more convex than that of the green turtle, would contrive to regain their feet, they are either kept down with a heavy stone or slain on the spot.

Agility is very necessary in turtle-hunting. The turtle, especially when of large size, is not so slow in its movements as some authorities assert. Moreover, it never stations itself at such a distance from the sea that it cannot rapidly regain the waters; and if the hunter does not make haste, it may happen that the turtle will say to him, as to the hare in the fable—

> "De quoi vous sert votre vitesse?
> Moi l'emporter! et que serait-ce
> Si vous portiez une maison?"

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CHAPTER II.

THE SEA-SERPENT.

"The heedful boatman strongly forth did stretch
His brawny arms, and all his body strain,
That th' utmost sandy beach they shortly fetch,
While the dread danger does behind remain.
Sudden they see, from midst of all the main,
The surging waters like a mountain rise,
And the great Sea, puffed up with proud disdain,
To swell above the measure of his guise,
As threatening to devour all that his power despise.
* * * * * *
"Eftsoon they saw a hideous host arrayed
Of huge sea-monsters, such as living sense dismayed.
* * * * * *
"The dreadful fish that hath deserved the name
Of Death, and like him looks in dreadful hue;
The grisly wasserman, that makes his game
The flying ships with swiftness to pursue;
The horrible Sea-Satyr, that doth show
His fearful face in time of greatest storm;
Huge zyperis, whom mariners eschew
No less than rocks, as travellers inform;
And greedy rosmarines, with visages deform."—SPENSER.

ANCIENT TRADITIONS AND NORWEGIAN LEGENDS RESPECTING THE SEA-SERPENT.

THE monster we have now to introduce to the attention of our readers is too celebrated, and has given rise to too many discussions, for us to omit it from our catalogue of the wonders of the deep.

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The most ancient references to the Sea-Serpent are, it appears to us, those which the Bible furnishes. It is the usual plan to look upon the word *leviathan* as synonymous with the whale. That this is an error is proved, we think, by the following verse from the Book of Isaiah :—

"In that day the Lord with his sore and great and strong sword shall punish leviathan the piercing serpent, even leviathan that crooked serpent; and he shall slay the dragon that is in the sea" (Isa. xxvii. 1).

Job describes the leviathan in the fortieth and forty-first chapters. In a long discourse he has recalled his ancient prosperity, with which he contrasts his present misery, and, extenuating his errors, declares himself a just man. Elihu reproaches him with his pride; and, finally, according to the Hebrew book, God himself appears in a whirlwind, and humbles Job by reminding him of the greatness of his works. Among the animals, he cites behemoth and leviathan; and we now proceed to quote some of the passages relating to the latter monster :—

"Canst thou draw out leviathan with an hook? or his tongue with a cord which thou lettest down?

"Canst thou put an hook into his nose? or bore his jaw through with a thorn?.....

"Shall thy companions make a banquet of him? shall they part him among the merchants?

"Canst thou fill his skin with barbed irons? or his head with fish spears?.....

"Who can discover the face of his garment? or who can come to him with his double bridle?

"Who can open the doors of his face? his teeth are terrible round about.

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"His scales are his pride, shut up together as with a close seal.

"One is so near to another, that no air can come between them.

"They are joined one to another, they stick together, that they cannot be sundered.

"By his neesings a light doth shine, and his eyes are like the eyelids of the morning.

"Out of his mouth go burning lamps, and sparks of fire leap out.

"Out of his nostrils goeth smoke, as out of a seething pot or caldron.

"His breath kindleth coals, and a flame goeth out of his mouth.....

"The sword of him that layeth at him cannot hold: the spear, the dart, nor the habergeon.....

"He maketh the deep to boil like a pot: he maketh the sea like a pot of ointment.

"He maketh a path to shine after him; one would think the deep to be hoary."

From these quotations we may infer that the Israelites regarded the leviathan as a sea-serpent, whose mouth was garnished with formidable teeth, whose body was covered with compact scales, and whose eyes flashed with fire. Flames seemed to issue from its mouth: is not this the illusion always produced by the long, narrow, and red tongue of reptiles? From its nostrils went forth puffs of smoke. Its limbs were linked together; in other words, metamorphosed into fins, like those of the amphibia or the whale. The armour which covered it was rendered invulnerable to the weapons of that epoch, the sword, sling, and

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dart. Its appearance was indicated by an agitation and a boiling up of the waves, and it was phosphorescent. Finally, it was carnivorous; for in the book of the Prophet Amos we read:—"Though they be hid from my sight in the bottom of the sea, thence will I command the serpent, and he shall bite them" (Amos ix. 3).

Nearly all these characteristics we meet again in the Scandinavian legends.

Pagan antiquity says little of the sea-serpent. There is an allusion to it, perhaps, by Palladius, in his description of the *Odontotyrannus*, the serpent of the Ganges, "which," he says, "could swallow an elephant without masticating it!" Solinus, too, seems to have heard men speak of it: according to him, it inhabits Hindustan and Ethiopia, is twenty cubits long, and swims across the Indian Ocean, voyaging from one island to another. Lastly, Pliny relates that Solam found in the Ganges some prodigious worms, which had two gills, and were six fathoms long. "They are blue.....Such is their strength that they can seize and drown an elephant."

It is not until the Middle Ages that we meet with any authors who have collected the curious floating legends of many generations in reference to the Sea-Serpent of the North.

Pontoppidan, Bishop of Bergen, in Norway, remarked in 1752, that in his country the belief in the existence of this reptile was so strong, that whenever he spoke doubtfully about it in the district of Norland, everybody smiled, just as if he had questioned the reality of the eel or the serpent.

On those Northern coasts it is called *Soe-armen* or *Aletust;* and the popular Scandinavian poet, Pierre Das, celebrates it under the first of these names.

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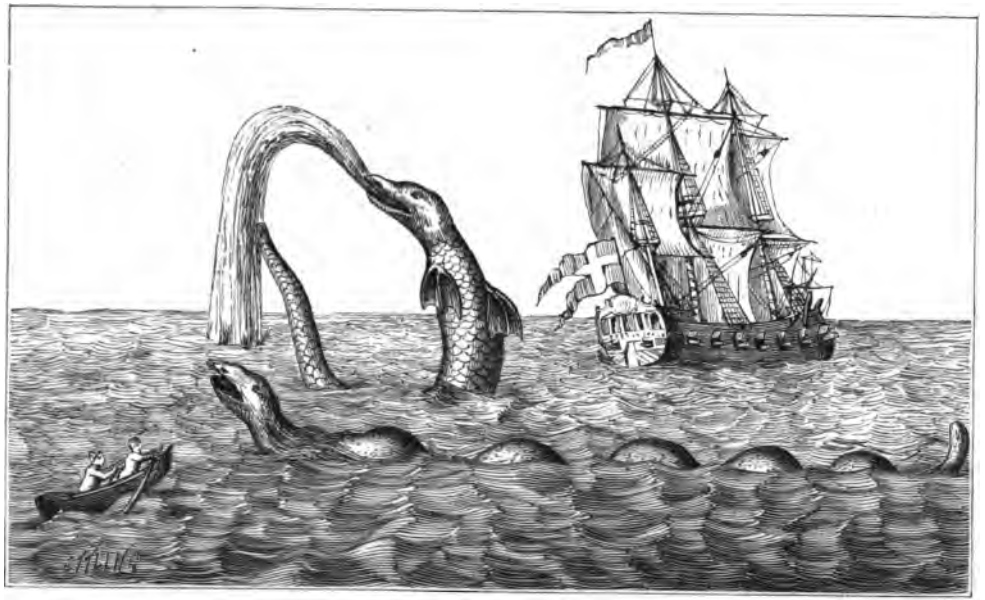

THE SEA-SERPENT.
(Facsimile of an Engraving of Pontoppidan's.)

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There are two kinds of sea-serpents, according to the naturalists of Northern Europe; the one marine, the other amphibious.

The amphibian species, with which undoubtedly we must connect the serpent of the Ganges, is born upon *terra firma*, and does not betake itself to the sea until it is too large to move easily except in a liquid medium. Nicholas Gramius, minister of the gospel at Loudon, relates that on the occurrence of a flood an immense serpent was seen hastening to the sea, which had hitherto lived in the rivers Mioz and Bauz. It overthrew everything on its route—animals, trees, and cabins; and gave vent to the most terrible cries. The fishermen of Odal were so terrified that some time elapsed before they dared to embark.

The celebrated Archbishop of Upsal, Olaüs Magnus, whom we have already quoted in allusion to the kraken, speaks also of these amphibian serpents. They issue out by night, he says, from the rocks in the neighbourhood of Bergen; they have a mane, their body is covered with scales, their eyes are shining: they hurl themselves against the ships, "snapping at, and dragging towards them, all they can discover."

This description likewise applies very readily to the other species of sea-serpent; so that it would seem best to admit that the marine species sometimes ascends the course of the rivers, or penetrates into the great marshes of the interior.

It is after this monster in Olaf's antique Saga that the king names the ship in which he contemplates the reconquest of his kingdom.

In the voyage of Saint Brandain to the Terrestrial Par-

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adise, mention occurs of a sea-serpent. Olaüs Magnus relates that he saw one, fifty feet long, near the island of Moos in 1522, "rolling in the fashion of a ball;" and even in the "Historia Naturalis" of H. Ruysch, published in 1718, the author has designed one of these animals under the title of the Norwegian Serpent.

Finally, let us add that Paulus Egidius fell in with one which he describes in his second voyage to Greenland, that very often (say the credulous) they have been seen upon the Scandinavian coasts, and that their carcasses have been found, thrown up by the waves, at Ermunds-Vaagen in the Norfiord, and in the island of Carmen.

To sum up: according to the inhabitants of Northern Europe, the sea-serpent is of immense length—that is, from eighty to one hundred feet; it swims by undulating vertically in the sea, and propelled by fins behind its neck: like terrestrial reptiles, it sheds its skin; for an inhabitant of Kopperwig, according to tradition, got hold of an abandoned skin, and converted it into table-covers! As to the nature of this skin, a difference of opinion exists; it is soft according to some, and scaly according to others. A mane stretches down its back; its eyes are large, and very shining; and the form of its enormous head reminds one of that of the horse. Some narratives ascribe to it the possession of vents, through which it spouts water like the whale. It is seen only in summer, and when the weather is fair, for its body is so wanting in stability that it cannot withstand the slightest gust of wind.

Like all rare and gigantic animals, the sea-serpent excited a lively terror; and the dread with which it inspired the navigator originated the marvellous stories of its strength and ferocity. The sailors say that, in the Nor-

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THE LEGENDARY SEA-SERPENT.

thern seas, it flings itself across the ships, so as to capsize them by its weight, that afterwards it may feast at its ease on the bodies of the drowned. They say also that it is often seen to rear itself erect on the surface of the sea, and bending over the ship, select its prey among the terrified voyagers! But if the Norwegians see in this animal so formidable an enemy, they have at least a very simple means of putting it to flight. For, they say, it has a very delicate and susceptible sense of smell; it particularly holds the odour of musk in horror; and if you are careful to spread this perfume over the ship's deck, as soon as the monster smells it, it takes to flight with all possible rapidity, or dives deep down into the sea.

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THE SEA-SERPENT OF OUR OWN TIMES.

But it is not only in the days of antiquity that sea-serpents have been seen by voyagers and mariners. Various modern narratives make mention of them;* and M. Amédée Pichot, the eminent naturalist, in an able article on "Apocryphal Animals," contributed to a French periodical, quotes two very curious letters, which we in our turn shall also quote.

The first one is signed by Captain Laurent de Ferry (of Bergen). It runs as follows:—

"At the end of the month of August 1746, I was returning from a voyage to Trontheim, in calm warm weather. I had intended to put in at Molde, but when within three leagues of that port, and while I was reading some book or other, I heard the eight oarsmen murmur, and observed that the helmsman was taking us out to sea. To my question the answer was, that a sea-serpent was right in front of us. I thereupon ordered the pilot to make again for the coast, and to approach this curious creature, of which I had heard so many tales. In spite of their lively alarm, our seamen were constrained to obey. But the serpent swam rapidly in the same direction as ourselves, and in spite of all our efforts it had soon got past us. I took my gun, which was loaded, and fired upon it. Almost at the same instant it dived, did not again reappear, and we saw that I had hit it with a few balls, for the water remained reddish one or two minutes at the place where it had dived. Its head, which rose upwards of two feet

* François Leguat, cruelly abandoned by the authorities of the island of Mauritius on a desert rock, slew there, he says, a sea-serpent.—*Voyages et Aventures de F. Leguat, 1708.*

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above the highest waves, resembled that of a horse. It was of a gray colour, with the mouth very brown, the eyes black, and a long mane floating about its neck. Besides the head of the reptile, we could distinguish seven or eight of its coils, which were very large, and rose at an interval of six feet from one another. Having related this adventure before a person who desired an authentic narrative, I put it in writing, and remit it with the signatures attached of two sailors, eye-witnesses, Nicolas Peverson Kopper and Nicolas Nicolson Angleweven, who are ready to attest its truth by oath. L. DE FERRY."

Laurent de Ferry is very clear; there is no ambiguity in his narrative! And it exactly accords with all the other descriptions extant of the sea-serpent.

Mr. Maclean, a clergyman, addressed another, and not less precise statement, to the Wernerian Society of Natural History. He dates his letter from the Hebrides; and it is truly amusing to see how the simple pastor allows his terror to appear in every sentence. It seems as if he were still trembling at the recollection of his encounter; and his fear is fully equal to that of the seaman who saw the monster "with eyes as big as saucers":—

"I have received, sir, your letter of the 1st current, and I should have replied to it sooner had I not wished to increase the number of particulars relative to the animal whose description you ask for. If my memory is faithful, it was in June 1808 that I perceived it, on the coast of Coll. I was rowing in a boat, when I remarked, about half a mile off, an object which gradually excited my surprise. At the first glance it appeared to me like a little rock; but knowing there was no rock in that situation, I ex-

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amined it attentively. I then perceived that it rose considerably above the level of the water, and after a slow movement I distinguished one of its eyes. Alarmed by the animal's extraordinary aspect and enormous size, I guided the rudder of my boat in such a manner as not to keep too far off the shore, when suddenly we saw the monster plunging in our direction.

"Persuaded that it was pursuing us, we rowed with our utmost strength. Just at the moment that we sprang upon a rock, where we climbed as high as we possibly could, we saw it glide rapidly over the surface of the water towards our boat. At some fathoms from it, finding the water deep, it reared upright its horrible head, and sweeping round, was obviously puzzled how it should disengage itself from the narrow creek it had entered. We could still perceive it at a distance of half a mile. Its head was large, of an oval form, and carried upon the summit of a neck which was more slender than the remainder of its body. Its *shoulders*, if I may so call them, had no fin; and the body diminished in size towards the tail, whose outline it was difficult to see very clearly, because the monster kept it continually under water. It seemed to move by progressive undulations from above to below. Its length was probably seventy to eighty feet. It advanced or receded more slowly each time that its head was out of the water; and when it reared it above the sea, evidently seemed to be looking out for distant objects.

"About the same period that I saw this marine serpent, it was discovered in the neighbourhood of the island of Canna. The crews of thirteen fishing-boats were so much alarmed at its appearance that, with one accord, they all took refuge in the nearest creek. Between them and

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Canna the crew on board another wherry saw it approaching, with its head out of water. One of the boatmen afterwards declared that the head was as large as a small barrel, and the eyes as big as a saucer. With this exception, I have been unable to obtain from those who met it any details more interesting than those I have just recorded.

"DONALD MACLEAN."

Some months later there was stranded on the shore of Stronsay, one of the Orkney Islands, and not far, consequently, from the Hebrides, the body of a monstrous serpent. The sheriff-substitute and other officials, Dr. Barclay, and several men of science, drew up an authoritative document, in which it was stated that the animal measured fifty-six feet in length and ten feet in circumference; that a kind of bristling mane stretched along its back from a point below the neck to a point about three feet from the tail; that the silk of the mane was phosphorescent at night; and that its fins, which measured about four feet, closely resembled the plucked wings of a goose. This latter fact had already been pointed out by Paulus Egidius. "Instead of fins," says that traveller, "he had great ears pendent like wings."

In this we have the first *official* declaration of the sea-serpent's existence. There exists a second, which induced divers individuals, as Mr. Elkanah Finney, Mr. Abraham Cummings, and others, to declare that they, too, had fallen in with marine reptiles.

In the month of August 1817, it was announced to the Linnæan Society of the United States that a prodigious animal had been several times met with in Gloucester Bay, near Cape Anne, at about thirty miles from Boston.

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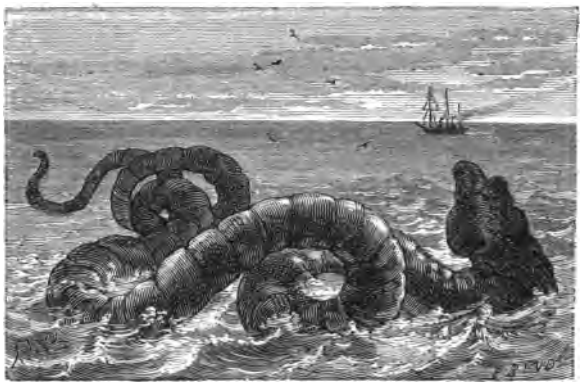
Its general character was described as that of a serpent; it swam with an astonishing rapidity, like to a series of buoys or barrels, each plunging in its turn into the water. It was in tranquil weather only, and when the sun was shining with all his splendour, that the monster made its appearance before the astonished eyes of the fishermen.



THE AMERICAN SEA-SERPENT.

The Society immediately appointed a committee to examine into, and report upon, the tales circulated respecting this singular animal. The committee repaired to the spot, interrogated a great number of witnesses; made, in a word, a most searching inquiry, not less rigid than is pursued by a magistrate when investigating the circumstances which have accompanied a mysterious crime.

The report issued by the committee excited great attention in America, and the entire agreement of the depositions of the various witnesses,—in so far, at least, as concerned the principal facts,—was amply sufficient to prove that the inquiry had not been directed to any empty

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reverie or idle hoax, but to a genuine and authentic incident:—

One of the witnesses had seen the sea-serpent only from a distance: with his telescope he counted eight separate portions, and this appearance he attributed to the animal's undulations in a vertical direction. Another saw, on the 10th of August, the reptile gliding swiftly just beneath the surface; and again caught sight of it, on the 25th, tranquilly extended upon the waves, its deep brown body covering a length of fifty feet. A third individual compared its head to that of a rattle-snake, but as large as that of a horse, and with a body fully one hundred feet long. , Between this maximum and the minimum of fifty feet all the witnesses, we may observe, placed their calculations. Some had seen it open its jaws, like those of a terrestrial reptile. In its swimming, which was sometimes rapid, sometimes slow, it described circle after circle, or struck forward in a straight line. Sometimes it kept its head raised a foot above the surface of the sea.

On the 14th and 28th several guns were fired at it; and at each discharge it turned round, made towards the boat, then diving under the keel, reappeared a few fathoms beyond. But at the second attack, probably being wounded, it kept away and returned no more, and by this means terminated the observations of which it had been the object.

A Belgian voyager has assured us that one day, on a voyage from Rotterdam to Java, and when not far distant from the latter island, he saw, after a storm, a serpent several yards long, which had fallen asleep on the piece of timber projecting from the hull of ships, where the shrouds are fastened (*sur cette pièce de bois qui fait saillie*

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à la coque des navires, et où commencent les haubans). This was in the open sea. It was very quickly made to seek another resting-place.

Another witness, Captain Verstraeten, a Dutchman, relates that he saw, likewise near Java, one of these animals of gigantic dimensions, which coolly contemplated him. As he made a noise to summon his men, the animal dived underneath the ship, and he saw it extend in a lengthened mass.

As these two witnesses are dead, we cannot obtain any more detailed or precise statements. It is the last time that we hear of this curious animal.

We cannot tell whether this long exposition will have carried conviction to the minds of our readers, and whether they will be of opinion that we should transport the great sea-serpent from the world of fable into that of reality. We ourselves—we confess it with all humility—have come to no exact conclusion on the matter.

However, it appears scarcely probable that so many persons would speak of it in so affirmative a manner unless there was some truth at the bottom of their descriptions; more, it would be astonishing to see Americans, Norwegians, and Englishmen agreeing in so remarkable a manner, if their narratives were utterly without foundation.

Because it has not been recently seen, because no remains of it exist in our museums, we are not justified in concluding that the sea-serpent is a work of imagination.

It is only probable that fear, which enlarges every object,—that the desire of notoriety, which induces men to draw upon their imaginations, may have induced narrators to exaggerate considerably the dimensions and aspect of

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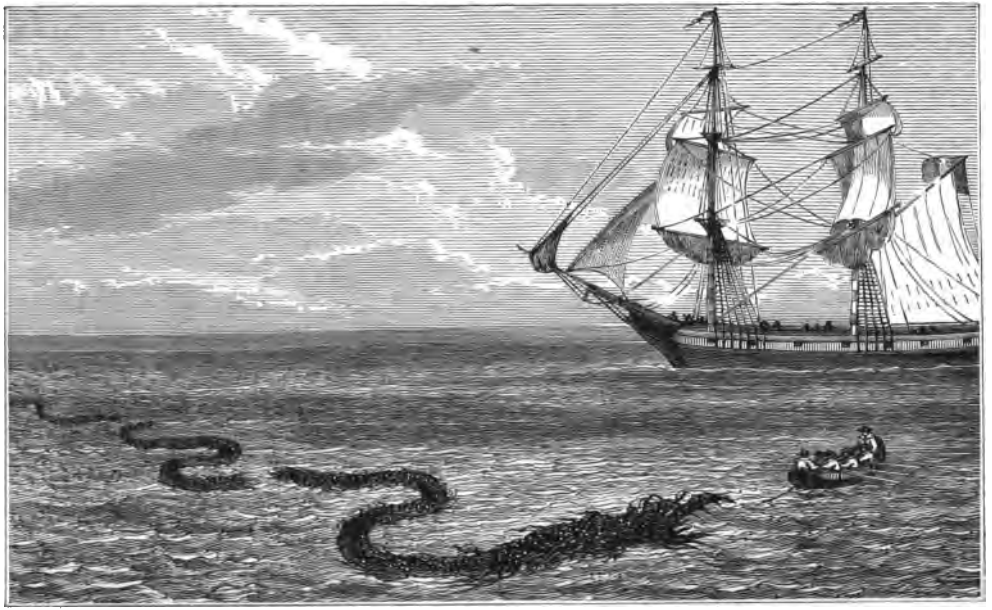

GIGANTIC SEA-WEED.
(Supposed origin of the Sea-Serpent.)

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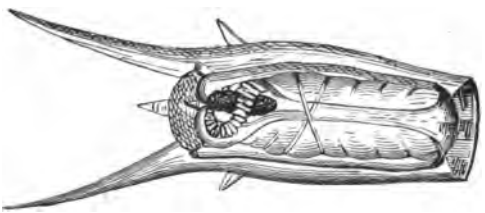
the serpent, as has been the case with the kraken, the whale, the roc, and others.

Nothing, in the descriptions quoted, is at all incompatible with the laws of nature; and certainly, among the marine reptiles which paleontology has made known to us, there are few which are not a thousand times more extraordinary than our serpent! And, moreover, if we will not admit that there can be an aquatic serpent, may we regard it, as Sir Everard Home did, as a shark with an elongated body?*

In conclusion, let bathers reassure themselves. The sea-serpent, if, indeed, it exists, is not ferocious. It will



A SALPA.

approach the land for no other purpose than to cast its skin, and it immediately returns into the open sea. It can swim only in deep water, and never quits the colder deeps. In its timidity, it gladly avoids man; and the Scandinavian fishermen know very well that, when they

* Naturalists are already acquainted with a whole group of living aquatic serpents, but they are small. Their tail is flattened so as to serve for an oar. All inhabit the warm equatorial waters, and they have never been caught, except in nets far out at sea. We may refer, for an example, to the Water-Snake of Japan; it is covered with scales forming alternative rings of white and black. These reptiles have neither feet nor fins. In the waters of New Caledonia, a French colony, sea-serpents about six feet and a half in length literally swarm.

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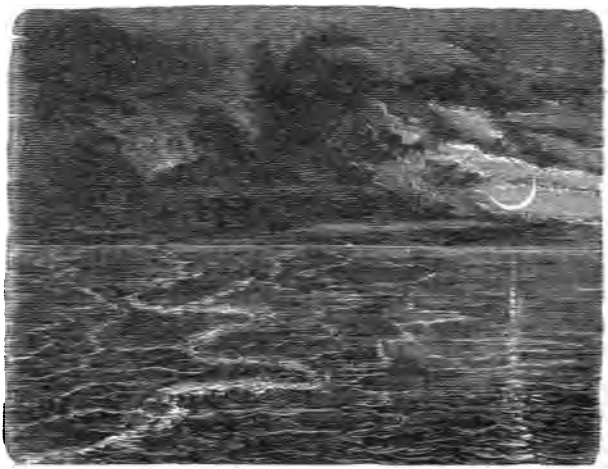
encounter it, they need only steer straight towards its head to ensure its immediate disappearance.

It is necessary, when we read what has been written in reference to the sea-serpent, to recollect that two causes of error may have frequently deceived observers.

By day it often happens that superstitious seamen, observing long chains of brown tufts of sea-weed floating by, have fancied these were the loosened coils of the great ocean monster. But, more particularly, it is at night, when immense lengths of *phosphorescent salpœ* float upon the waves, that the illusion is complete.



A CHAIN OF SALPÆ.

The *Salpœ* or *Biphorœ* are aggregated molluscs. Taken separately, each of them has an oblong body, nearly cylindrical, rainbow-hued, contractile, and open at each extremity.

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The salpæ are met with in transparent files, which consist of individuals placed side by side, and are transversely ingrafted at each extremity, so as to form a double and parallel cordon.

They float in this way over a length of thirty or forty miles.

"The columns of salpæ," says Rymer Jones, "glide in the tranquil waters by regular undulations. The little swimmers in each file contract and dilate simultaneously. They manœuvre in concert like a company of well-disciplined soldiers; each series offering apparently but one single individual, who moves forward with serpentine meanderings."

Now we may easily conceive that, on many occasions, imaginative voyagers, seeing these numerous columns advance towards their ship, have fancied that the eyes of the famous sea-serpent glared upon them!

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Book Fourth.

BIRDS.

CHAPTER I.

THE METAMORPHOSES OF MARINE BIRDS.

BERNACLE GEESE—THE BLACK DIVERS OR SEA-DUCKS—ANCIENT FABLES—THE TRUTH.

IT has been frequently said that it is the character of ignorance to appear acquainted with everything. Thus it is that modern men of science, who know much, do not hesitate to recognize that Nature is far from having unveiled to them as yet all her mysteries; while the ancient naturalists preferred to invent and maintain the most improbable fables, rather than acknowledge the extent of their ignorance. This, evidently, is the cause of the incredible stories which formerly prevailed in regard to the origin of sea-ducks and bernacle geese.

We purposedly couple together these two very different

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species,—the one a duck, the other a goose,—because nearly all the authors we are about to cite have confounded them, and their descriptions relate to the one as well as to the other.

Like the majority of the palmipeds, these birds voyage in innumerable flocks. Their battalions, closed so compactly together as to shut out the light of the sun, migrate in the winter to Scotland, Norway, and the northern regions of Europe, and in the summer return to the Arctic lands and seas.

When, and where, do they hatch their eggs? To these questions our ancestors could offer no reply; and therefore thought fit to conclude that they never laid any.

How, then, or in what, did they originate? The men of science reflected long and seriously, and finally solved the difficulty in the manner explained by the author of the "Wonders of the World" in the fifteenth century:—

"Near the region of Scotland, and the island of Pomonia, on the sea-shore, certain birds, which the inhabitants of the country call crabrans, or cravens, congregate and engender: the which birds do not engender, or lay, or incubate, nor have father or mother; but they are born, and they congregate, and they engender in the corruption and rottenness of the old wood and planks of old ships, old masts, and old oars, which rot in the sea, and engender in this manner. When the old timber of a ship, lying on the beach, falls into the sea, it is rotten and corrupted with its own slime; and with this rottenness there is engendered in the wood a kind of filth, which is also greasy and tenacious, like the white of an egg; and from this filth birds form and engender, which hang by the beak against this old timber for the space of two months or more; and

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when the time comes that they are all covered with their feathers, and are large and fat, they drop into the sea. There the God of mercy endows them with a natural life, and they become beautiful and pleasant birds, and wear a black plumage, and fly about the sea wherever they will, like other birds; and possess a flesh as white, and tender, and savoury as the flesh of a wild duck. In which," adds the anonymous writer, "there is nothing very astonishing, since Genesis declares that the birds were created at the same time as the fish out of the mud of the sea." *

This extraordinary and ingenious explanation could not fail to be successful, and was, in fact, very generally accredited. It was adopted by Cornelius, Scribonius, Alexander of Alexandria, Parthenopus, Torquemadas, and Baptista Porta.

But soon another version was put forward, which rallied around it a certain number of scholars, such as Munster, G.-A. Vavasseur, Jean Botere, Saxo Grammaticus. This new theory was, that our palmipeds were the leaves of a bush growing on the sea-shore, which, falling into the water, were metamorphosed into birds!

A conflict was thus originated, which long and uselessly occupied the precious moments of the scientific thinkers of the sixteenth century.

To prove that the black divers sprang from rotten wood, Michael Majorus composed a treatise, in which he displayed all the subtleties of peripatetism. "I find," said he, "the *efficient cause* of the generation of this bird in the sun, which, through its vivifying heat, has an influ-

* "Des Merveilles du Monde," c. lxii. In Claude Duret, "Histoire admirable des Plantes," p. 297. (Paris, 1605.)

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ence upon all generative work. The *material cause* is the rotten wood. The *final cause* is the glory of God and the ornament of the world." As for the *substantial form*, he discovered it in the stars; he saw an *astral form*, which he married to the rotten wood, and from this happy union made innumerable divers spring.*

A poet of the sixteenth century, desirous of celebrating these marvels, but keeping a prudent mean between the two opposing factions, admitted both the paternity of the planks and the leaves:—

> "Ainsy sous soy Boothe ès glaceuses campagnes,
> Tardif void des oysons, qu'on appelle cravaignes,
> Qui sont fils (comme on dit) de certains arbrisseaux,
> Qui leur feuille féconde anime dans les eaux.
> Ainsi le vieil fragment d'une barque se change
> En des canards volants: ô changement estrange!
> Mesme corps fut jadis arbre vert, puis vaisseau,
> Naguères champignon, et maintenant oyseau."

This idea, that leaves, on coming into contact with the waves, were transformed into animals, was not, however, new. A legend pretends that in Egypt certain fish spring in this wise from the leaves of the Stratiotes, or "Water Soldier;" and an anonymous voyager, who has left a manuscript in the Romance language, dated 1322, writes:—

"Hia arbre en nostro pays co es en Angleterra, quey ha arbre, qua les flors qui donent en terra se tornan ocells bolars qui sont bons per mengar ê no viven, et aquele qui caen en l'aygua vivent, et dacó ells se mar avelten fortimen."

But all this did not prove sufficient to satisfy certain obstinate minds; the Abbé de Valmont, taking advantage

* The proofs on which the Count Maier or Majorus relies are most fantastic, and but for his simplicity, we should accuse him of irreverence when he says:—"Quod finis proprius hujus volucris generationis sit, ut referat duplici sua natura, vegetabili et animali Christum, Deum et hominem, qui quoque sine patre et matre, ut illa, existit."—*Thaumatographia*, ed. by Johnston, c. vi.

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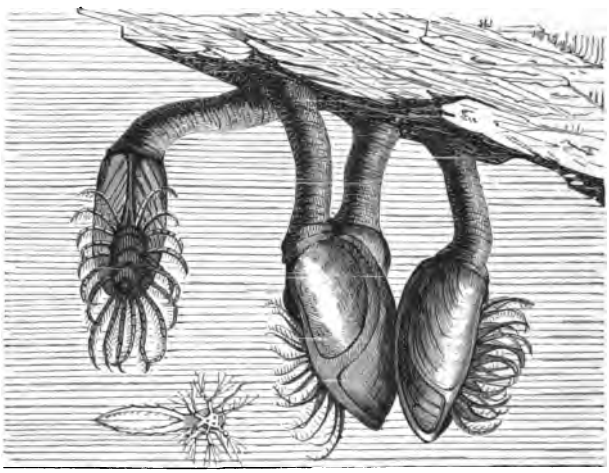
of opinions put forward by Péna, Lobel, Guillaume Rouille, and of popular narratives on the English coasts, invented the celebrated history of the Anatiferæ.

The anatiferæ and the balani are, as we know, cirrhipedes; that is, animals apparently resembling molluscs, fixed like them upon submerged bodies and preserved by a calcareous incrustation, but in their organization resembling the crustacea.



ANATIFERÆ, OR "BARNACLES."

Nowadays, we know their mode of reproduction; we know that the young differ considerably from their parents, are mobile, and do not assume permanent positions until they reach maturity; but a hundred years ago no one had any idea of these interesting facts, and men were ignorant of the habits of these little creatures.

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The origin of the balani and that of the black divers were equally unknown. In this fact, thought the Abbé de Valmont, there was more than a simple fortuitous correlation. He remembered, moreover, what Scaliger had written, that, "on one occasion, some people had sent to Francis I., that very good and very great king, a shell-fish, not very large, in which there was a little bird completely formed. It clung to the shell by the extremities of its wings, its bill, and its feet." From all these circumstances the abbé came to the conclusion that the anatiferæ, or barnacles, were the eggs of black divers and geese.

"I trust I am not too venturous," he said, "in affirming that the divers spawn their eggs like fishes; and, in the same way, allow them to fall, by chance or as they will, in the water, and that the sun hatches them. I add"—he wrote, as a concession to the ancient tradition —"that when these eggs are floating in the water, they attach themselves to any object they meet with, and specially to decayed wood, because it is covered with a viscosity which entangles and retains them."

In the meanwhile, a conscientious and truthful observer, M. de Childrai, announced that he had succeeded in discovering, in the far north of Scotland, some black divers sitting on their eggs, like other palmipeds. One would have supposed that a discovery so obviously authentic would have been immediately admitted, and would have annihilated all the extravagant systems we have just been describing; but it was not so. Men refused to believe it. But what is most curious, is the reasons which induced them to deny Childrai's assertions. We leave it to the Abbé de Valmont to speak:—

"I fear very much that M. Childrai does not under-

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stand the subject. He has not reflected that cold-blooded animals like fishes and divers do not sit on their eggs. Why *should* they do so? They would be wasting their time! Would it be to warm their eggs? But how should they warm them? For fishes and divers are animals as cold as marble! I confess that I do not comprehend why the divers should sit upon their eggs. I believe that M. Childrai has deceived himself, and mistaken wild ducks for bernacle geese!

Observe to what extremities men are led or driven by their preconceived ideas! It is evident that the abbé would have thought himself guilty of heresy if he had admitted, contrary to the decisions of the Church on fat meats or lean, that the aquatic birds were other than feathered fishes; and at the beginning of the last century, long after the days of Perrault, Duverney, and their compeers, he still preferred to believe in a monstrous exception to the laws of nature, rather than in any divergence from the science of antiquity.

Perhaps, however, it is justifiable to think that the Abbé de Valmont, abandoning himself to the frantic course of his imagination, disquieted himself but little about discovering the truth or no, provided that what he said did not pass unnoticed. Thus, not content with a lengthy and effusive dissertation on the relations between barnacles and bernacle geese, he was desirous of finding a pretext for its insertion in his book on the "Curiosities of Vegetation;" and for this purpose he forces himself to prove that the anatiferæ, which he calls, a few lines lower down, the larvæ of palmipeds, are really and truly plants! The proof is, he says, that they are all found united in posies or clusters! What can be more logical?

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How superior to this coarse invention is the poetical fable of Ovid on the metamorphosis of Esacus into a sea-diver, and especially the song in which he sings the origin of the Halcyons:—

> " Mane erat, egreditur tectis ad littus et illum
> Mœsta locum repetit, de quo spectarat euntem."

At daybreak, Alcyone runs to the shore, and bends her steps sadly towards the point from which she saw her spouse embark. Then she pauses: " It is here," she says, " that he hoisted sail; it is here he gave me his farewell kiss." While she retraces the scenes of which her eyes were witnesses, and casts her glances over the sea, she perceives in the distance, floating on the wave, an object like a corpse. At first she cannot distinguish what it is. Gradually the waves hurl the body towards her. Though still at a distance, she recognizes it as that of a man. Who can it be? Evidently the poor creature has perished in a shipwreck, and her heart is troubled at the augury. Then, as if she wept for one unknown, " Alas!" cried she, " whoever thou art, I pity thy fate and that of thy spouse, if thou have one!" The waves dash the corpse forward; she grows more attentive; her senses are more troubled. Finally, the body touches the shore, so that Alcyone can recognize it. She looks! It is her husband. " It is he!" she cries. At the same moment, she tears her garments and her face, she plucks out handfuls of her hair, and, extending to Ceyx her trembling hands: " Is it thus, my loved, my lord," she says, " is it thus you have returned to me?"

Near the sea rises an artificial dyke, which breaks the first impetuosity of the waves, and renders their shock powerless. Alcyone darts herself from it, to the great

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astonishment of all; but she flies: an unfortunate bird, cleaving the air with new-born wings, she skims the surface of the waves. Sad sounds and plaintive cries issue from her mouth, or rather from her bill. She touches the pale and frozen body, covers with her wings the cherished remains, and impresses upon them a thousand kisses. Does Ceyx feel them, or is it the movement of the waves that raises his head? No one knows, but he has been capable of feeling. The gods, touched with divine pity, have changed the husband and wife into birds. Their love still endures in spite of their new destinies, and under their new forms they are still liable to the law of Hymen. During seven calm days, in winter, the Alcyon broods over her nest as it floats upon the waves. Then the sea is without danger: Æolus fetters the winds in their prison, and tranquillizes the waves, in favour of his grandchildren.*

WHAT IS THE TRUTH?

All the birds of which we have been speaking belong to the great family of Palmipeds. The Bernacle (*Bernicla leucopsis*) is smaller and lighter, with a slenderer neck, a shorter beak, and legs proportionally taller, than the wild goose; but resembles it in general appearance, and general habits. The plumage of the back is broadly varied with blue, gray, and black and white; from which combination of colours it obtains its French surnames of the "little nun" and the "pious sister." Under the belly, the plumage is beautifully marked with blue, gray, black, and white.

They breed in the north of Norway and Greenland, and it is in the autumn and winter only that they appear on

* Ovid's "Metamorphoses."

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the coasts of Yorkshire, Lancashire, and Londonderry; they have been seen, but very rarely, and in limited numbers, as far south as Burgundy. It is an unwieldy, unsuspicious bird, and allows itself to be caught in the nets with the greatest facility.

THE BLACK-THROATED DIVER.

The historian of Scandinavia reports that "the inhabitants of the North salt the geese, dry them in the sun, and eat them partly raw and partly cooked, after the summer solstice." Truly, an enticing dish!

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As for the black-throated diver (*Colymbus arcticus*), its plumage, as its name implies, is mainly black; more closely set, and shorter than the common duck, it is nearly of the same size. We shall conclude our remarks with a few quotations from the interesting notes which Baillon has collected in reference to its habits:—

"The north and north-west winds bring us, along the entire length of the coast of Picardy, from the month of November to that of March, prodigious troops of divers; the sea is, as it were, covered with them: you may see them hovering from place to place in thousands, and at every instant appearing on the water and diving beneath it. And when a single diver plunges, the whole band imitates its example, and disappears a few moments afterwards.....

"The favourite nourishment of the divers is a kind of bivalve, smooth and whitish, about four lines broad, and ten long. When the fishermen observe that the divers, according to their technical term, are diving for these *voimeaux* (as they call the shell-fish), they stretch their nets horizontally, but very loosely, over the area, not more than at two feet from the sand; a few hours later, the sea, rising to its full, covers the nets with a great depth of water, and the divers, balancing with the ebb and flow at two or three hundred paces from the shore, the first who catches sight of the bivalves dives; all the others follow; and encountering the net which lies between them and the bait, entangle themselves in its floating meshes; or, if a few of the more audacious break through and glide beneath it, they are as quickly entangled as the others, when, after having satisfied their hunger, they attempt to rise to the surface. All are

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drowned; and as soon as the tide ebbs, the fishers remove them from the net where they hang suspended by head, wings, or feet." *

Our authority continues:—

"In the year 1781 I kept a diver in my courtyard for several months; I fed it upon soaked bread and shell-fish, and it grew quite at home.....Its gait is slow; if you push it, down it falls, because in the effort to move faster it loses its equilibrium.

"It does not amuse itself, like the sea-swallow, in opening the shell-fish on which it feeds, but swallows it whole, and digests it in a few hours. I gave them to my diver twenty at a time.....The sea is its only element; it flies as badly as it walks." After all, it died of the wounds inflicted on its feet by the courtyard pebbles.

* It was while carrying on this fishery that Walton discovered the secret of mussel culture.

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Book Fifth.

MARINE MAMMALS.

CHAPTER I.

THE QUEEN OF THE SEAS.

THE most monstrous of all animals is the Whale. Compared with it, the elephants themselves are dwarfs; and though Science has imposed upon us the necessity of pruning down the exaggerations of the ancients, its real dimensions are still so huge that if one could be reared upon its tail, in the centre of the nave of one of our cathedrals, its jaw would nearly reach the roof.

We know there are various species of whales. Some have a smooth uniform back; others (the Rorquals) are distinguished by a dorsal fin.

In the former category are included the Greenland whales; in the second, the Knotty, the Humpback or Rorqual, and the Finback or Jubarta.

The Greenland or right whale was the only species

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hunted up to the end of the last century. At that epoch, the British and the Americans, experiencing a great deficiency of prey in the Northern seas, abandoned them, and migrated to the opposite hemisphere, to pursue the Cape whale.

At the present day, this species, which in the time of Marco Polo swarmed on the coasts of Zanzibar, has so decreased in its turn, that our whalers are now obliged to take up the pursuit of the Jubarta, which was formerly neglected on account of its vivacity, its courageous resistance, the dangers incurred by its hunters, and the small profit which they derived from it.

At length, however, some fortunate experiments introduced, a few years since, the Nord-Caper or Sulphur-Bottom into the list of useful cetaceans.

In all these species the head is elongated and large, and the mouth forms a vast chamber or dungeon, wide open in front, but almost hermetically sealed towards the throat.

Everybody knows that the upper jaw is furnished along the sides, instead of teeth, with two rows of laminæ,—that is, of horny, black, fibrous, scythe-shaped plates, capable of being split up into thin layers or strips of baleen, known in commerce as *whalebone*. The inner edge of the laminæ slopes away in numerous floating filaments, which form a kind of compact network in the interior of the mouth.

The lower jaw has neither teeth nor whalebone.

It sustains a broad and very mobile lip, which covers the overhanging baleen, or, at least, its extremity. When the mouth is shut, it covers the interval between the two rows in front of it; when the whale lowers or drops this lip, it reveals a cavernous-like opening.

Within this opening the water is engulfed; then escapes

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between the horny plates, abandoning in the cavity—after it has been strained through the above-mentioned filaments—all the small bodies, little fish, molluscs, and crustaceans, which it contained. As for the greater animals, they keep out of the range of the whirlpool. Then the whale draws up its lip, and expands its tongue, which fills nearly the whole capacity of the mouth, driving out the water, and collecting the food under the roof of the upper jaw.

The reader will understand from this description that the whale does not swallow water, and it is equally certain that it does not eject any water through its nostrils.

The latter are situated on the upper part of the head, and take the name of *vents* or blow-holes. When the cetacean comes up to the surface of the sea to breathe, some drops of water force themselves in with the air, and collect in a membranous pouch, behind the nasal passages. During the animal's submarine sojourn, a contraction of the channel prevents the water from reaching the lungs. When it ejects the vitiated air, mingled with a great quantity of vapour and nacreous humour, it closes its pharynx, and expels the water in a kind of fine dust, which mingles with the expired air. Such is the cause of the double white column which is seen, at intervals, issuing from the whale's head.

The animals furnishing the food of the cetaceans being all of small dimensions, and of great softness, the throat is exceedingly narrow. While a boat and its crew might find space in the creature's mouth, a mackerel could not penetrate into its stomach. This fact would seem to contradict the history of Jonah as given in our authorized English Version. But, then, the Hebrew Bible does not say that Jonah was swallowed by a whale rather than by

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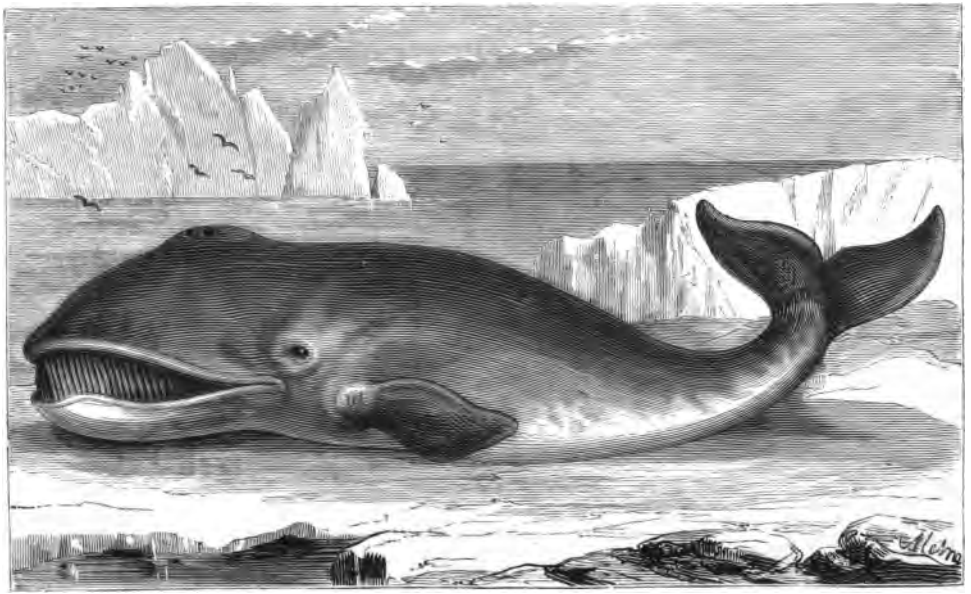

THE GREENLAND WHALE.

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any other aquatic animal. It is true, moreover, that the only creature with which we are acquainted, in any wise capable of swallowing a man without masticating him, is the white shark (*Carcharias vulgaris*). In large specimens of this species, the mouth, throat, and stomach might be large enough for this purpose. But even then Jonah could not have been swallowed whole *unhurt*, nor could he have existed for any time in the shark's belly. The miracle cannot be explained by natural causes.

All anecdotes of men swallowed by whales must, therefore, be at once denounced as fictions. Such, for instance, as the narrative of the credulous Fournier:—

"In the reign of Philip II., King of Spain, there appeared a whale in the ocean, very different from all other species; for it appeared in part upon the water, having very large wings, and progressing like a ship. Some vessel having caught sight of it, and broken one of its wings with a cannon-shot, the monster passed swiftly into the Strait of Gibraltar, roaring horribly, and was stranded at length on the beach of Valentia, where it was found lying dead. The mouth was so large that seven men could enter it, and a man on horseback stand erect in its jaw; two dead men were found in its belly; and in the Escorial may still be seen the jaw, which was seventeen feet long."

The Père Fournier adds: "Cadamuste, in his Journal, makes mention of a fish of the same kind, whose wings, he says, were as large as the sails of a windmill."

Not only is the "treasure-trove" of the two dead men an embellishment, but the whole account of these monsters, with their enormous wings, must be pronounced apocryphal.

This is not, however, the only wonderful story told about the whales. Their dimensions, especially, have been from

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all time the favourite theme of the fabulists of all countries; and as the marvellous is invariably seductive, the multitude have willingly admitted the most exaggerated versions, while carefully putting aside all accurate observations.

Pliny believed that in the Indian Sea whales existed upwards of 900 feet in length, or as large as a village!

Romancists, and even naturalists, like Gesner (1551), have pleased themselves in representing the whale as a fish equal in size to a small island, and have disembarked navigators on its weedy back. St. Ambrose, St. Malo, and others, fell victims, if tradition may be credited, to this error!

The idea of mistaken mariners landing on the back of sleeping cetaceans is not, however, peculiar to the West. In the celebrated treasury of the "Thousand and One Nights," Sinbad the Sailor disembarks upon a whale:—"One day in the course of our voyage the calm carried us opposite a small isle. The captain furled his sails, and gave his permission that any one might land who would. I was among the number. But just as we were diverting ourselves with eating and drinking, the island suddenly trembled, and gave us a rude shock.....*It was a whale.*"

It is easy to conceive that this fable, repeated by generation after generation, may have been adopted by all who possessed no means of ascertaining its falsity, and that the number of these must have been great. The *Bestiaire d'Amour*, of Francheval, written in the Middle Ages, relates it in the following fashion:—

"Aussi com il avient d'une manière de Balaine; qui

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est si granz que quant elle tient son dos deseure l'eve (eau), li (les) nautoniers qui le voient cuident (croient) que ce soit une isle, à çon (cause) que ele a le cuir del tot (partout) en tel manière come sablon de mer. Et de tant come li marinier viennent arriver sor li aussi com ce fust une isle, et s'i logent et demeurent VIII jorz ou XV et cuisent lor viandes sur le dos à la balaine. Mais quant ele sent le feu, si plonge soi et aus (les autres) el fons de la mer."

[And it comes in the manner of a whale; which is so great, that when it keeps its back above the water, the seamen beholding it think it is an island, because its hide covers it all over like the sea-sand. And so it comes to pass that the mariners land upon it as if it were an island, and lodge and abide there eight to fifteen days, and cook their food on the back of the whale. But as soon as it feels the fire, it plunges, itself and those upon it, into the depths of the sea.]

In the *Bestiariæ Divinæ* of Guillaume, composed about the same epoch, we meet with the same legend; but it is added that the whale has scales like sand, that its throat is as wide as a valley, and that the sweetness of its breath attracts to it the fishes.

One is astonished that all these ideas should be so absurd, when we seek their origin in the narratives of mariners, who generally sin less through the exactness of their descriptions than the exaggeration of dimensions. But all is explained when we remember that the only books consulted at this epoch, whatever subject a writer might wish to discuss, were the Bible and Pliny; and that criticism was so superficial, that everybody agreed in identifying

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the leviathan and the whale, though the two animals were obviously very distinct.

In a Hebrew book, the *Bara-Bathra*, it is asserted that a vessel was fully three days sailing above a whale, in traversing its whole extent from head to tail.

The Orientals triumph over us also in this respect. An Arab author affirms that the world rests on a whale. The latter happens to shudder, and the earth is shaken; such is the true cause of earthquakes. One day, the devil falling in with it, reproached it for supporting so useless a burden. He persuaded it to erect its spine, and throw off our globe. It was about to do so, when happily the news was carried to Allah, who hastened to the spot, and, after much discussion, happily prevailed upon the whale to continue carrying the Earth.

The inhabitants of Madagascar informed Flacourt that there were in existence some monstrous fish, three times larger than the Greenland whale; and that, about 1630, one was driven ashore, all shaggy and malodorous, in the creek of Ranoufoutchy.

In the seas of Zeudj, says Maçoudi, in the *Prairies d'Or* (the Golden Meads), there are some whales (*el-Owal*), from *four to five hundred cubits* long, but generally one hundred. However, they are very timid,—which is fortunate,—and are easily frighted away by a great noise.

The Chinese books, and among others the ancient manual *Tsi-hiai*, speak of the whale *phég*, which convulses four hundred and thirty-three leagues of sea when it stirs itself. As soon as it grows old, it is metamorphosed, and the giant of the sea becomes the giant of the air—the Roc.

A monstrous story is told by Olaüs Magnus, to the effect that the whale feeds very willingly upon large fish,

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herrings, sea-calves, and the like. When pursuing them, it is frequently entangled among the sandy hillocks; and the sea leaving them dry, the more eagerly it endeavours to withdraw itself the more deeply it sinks into the sand, and throws it up on either hand in a considerable ridge. The fishermen then hasten towards it, secure its huge mass with ropes and anchors, and cut it up into pieces.

CUTTING UP A WHALE (*facsimile of an engraving by Aldrovandus*).

Aldrovandus accepts this statement without hesitation, and seems desirous of confirming it by the engraving reproduced above, which is an amplification embellished from a vignette of Magnus.

There can be no question that the artist who designed it possessed a very imperfect zoological knowledge; but it is in the three following designs that his imagination has taken full flight.

The first pretends to represent a whale attacking a ship. Yes; this indescribable-looking creature, its neck bristling with points, its body without form, its measureless mouth garnished with six enormous tusks, its sunken skull ejecting volumes of water, its mocking eye as large as a man's head, is, according to grave naturalists, the

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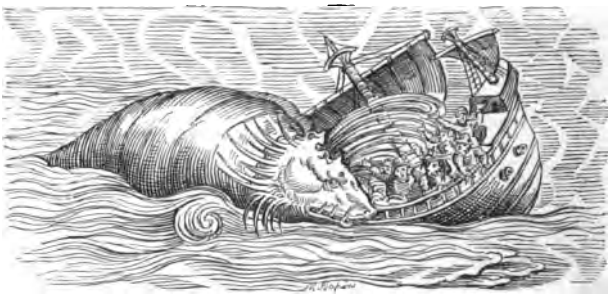
perfect image of a whale! And what is most curious is, that, by its side, Aldrovandus furnishes a figure of the true cetacean, rude, it is true, but tolerably exact, after Rondelet.

Nor is this the only want of sequence. For after these images we come upon others, all representing whales of



A WHALE ATTACKING A SHIP (*facsimile of an engraving after Aldrovandus*).

not less fantastic configuration, but every one differing from the other.

You see, for example, a monster whose neck carries a collar like a perforated umbrella, and along whose sides sailors are gravely stalking; while, with an utter disregard of the laws of equilibrium, they are boiling their pot upon a symmetrical pile of blazing fuel. Another picture shows us a whale torn to pieces by dolphins, such as Callot, in his wildest vagaries, would never have dared to dream of. A third represents a couple of gigantic mammals pursuing a caravel, and launching at it volumes of water.

This latter design is truly comical. These impossible whales—

"Monsters which never were, nor e'er could be"—

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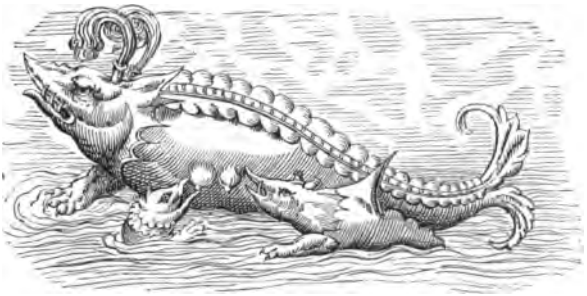
armed on the forehead with compactly planted darts, swimming with a scowling air towards the empty barrels



A WHALE HUNTED BY DOLPHINS (*facsimile of an engraving by Aldrovandus*).

thrown into the sea to amuse them; this ship loaded with seamen who, the more distant they are, are also the taller; and, above all, on the poop, yonder grotesque musician, playing a trombone, and hoping undoubtedly, in

WHALES PURSUING A SHIP (*facsimile of an engraving by Aldrovandus*).

his modesty, that the very whales will be put to flight by his inharmonious sounds: do not all these features combine to form a picture of amusing simplicity?

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These engravings are ridiculous—they do not represent the condition of true science even at the time they were taken—but they are *naïve;* they clearly illustrate the popular ideas of the epoch as to marine monsters; they are curious, and therefore valuable, and we hope the reader will not think we have wasted our space in reproducing them.

In reality: the whale is an animal from sixty to one hundred feet in length, with an enormous head, immense flippers, and, in some species, small fins upon the back. In its upper jaw it carries five or six hundred plates of baleen. Its eye is very small; its ear invisible externally, and, internally, very badly constructed. Finally, its body, according to the very accurate expressions of Bélon, has "neither hair nor scales, but is covered with a smooth, black, hard leathery integument, covering a layer of fat at least a foot in depth."

THE USEFULNESS OF THE WHALE.

It is almost unnecessary to remind the reader of the various uses of whalebone, or of whale oil. The latter is specially valuable in the preparation of certain tissues.

Unfortunately, it is now becoming very rare, and its price very high. The fishery of 1859 yielded 2078 barrels of oil; that of 1860, 1909 barrels; and that of 1861, 1710. Since the latter date its decrease has been continuous; and in 1864, several companies which had been formed to work this industry were obliged to give it up. Owing to the reckless manner in which the whales were formerly hunted, even in their breeding seasons, they have now become very scarce, and the whale-fishery has ceased to be a profitable pursuit. Fortunes are no

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longer made by it, as in the days when George the Third was king, and when a whaler of Whitby or Hull was as wealthy as the merchant-princes of London.

ON THE WHALE CONSIDERED AS A COMESTIBLE.

The flesh of the whale is edible, and it seems to have been held in high esteem by our ancestors. At one time it was regarded as a royal dish in England. In 1243, Henry III. invited the sheriffs of London to provide his table with one hundred pieces of whale. In the thirteenth century, it was served up at the repast of the Countess of Leicester; and whales captured in the Thames belonged of right to the Lord Mayor, who caused them to figure in the municipal banquets.

"The flesh of the whale is coarse and leathery," says Martens,* "but somewhat resembles that of the ox..... The flesh of the tail is softer.....The whalers cut it into great slices, and boil them.....It is not nearly so good as that of the ox.....The *French* eat it every day."

In 1773, Captain Colnett's crew, as we are informed, regaled themselves heartily on a young "calf."

The Normans, in this respect, were the great purveyors for the English: they had different recipes for preparing the cetacean, and most commonly served up the hunches of meat boiled with pease.

Doctor Thiercelin was looking, one evening, at some seamen engaged in melting the fat of a whale which had been killed during the day,—was smoking his pipe, and listening to their utterances. "In the midst of the men of the watch engaged in stirring up the fire with long poles, in plying the furnace with fuel to give it a fresh vigour, in

* Fred. Martens, "Voyages au Nord," ii.

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skimming the oil, in casting new slices of fat into the pots, some sailors were labouring at works less important from a general point of view, but to which they attached a great personal interest. Close at hand, one of them was employed in cutting up, on a piece of board which rested on his knees, a lump of whale's flesh freed from the filaments of cellular tissue which would have diminished their comestible quality. This done, he mixed it with some salted pork which he had retained for the purpose from his evening meal, and rolled it into one of those enormous balls which are the whaler's special delight. Another, more advanced in his culinary preparation, placed some choice bits, well covered with flour, and seasoned with garlic and pepper, in a small yarn net, and fastening it to the handle of a harpoon, plunged it into the boiling oil to fry. In a few minutes the cooking was complete; the fish-balls issued nicely browned, and formed a dainty dish of the most provocative character, the fragrance tickling the sense of smell, and the sharp and pungent flavour flattering the palate of our seamen quite as much as a *friture de sole* or a *rôti de venaison*. I had often eaten whale's flesh. Our cook, a skilful professor in the art of transformations and magniloquent pseudonyms, had frequently served up beef-steaks, and roast beef, and even beef *à la mode*, whose materials he had gained from the blubber-room, but I had never tasted whale cooked in the oil of the caboose. I ventured upon it this evening; I found it excellent, and promised myself that I would partake of it again. Only, I learned that these 'bullets' ought to be eaten fresh from the pot. Let them cool for however short a time, and the oil of the crust penetrates into the interior, the taste becomes burning, and the stomach best

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defended against indigestion cannot support them. I was therefore compelled to renounce all idea of introducing this curious dish into our bill of fare."

In concluding this chapter, it may be convenient to state that the two principal whale families are known to naturalists as the *Balænidæ* and *Physeteridæ*. The whales proper belong to the family *Balænidæ*.

The most important species, as we have already stated, is the Right or Greenland whale (*Balæna mysticetus*).

Next in value comes the Southern or Cape whale (*Balæna Australis*), which has a smaller head, and is of an uniform black colour.

Third, we must mention the Hump-backed whales (genus *Megaptera*)—of which the *Megaptera longimana* is known by the length of its pectoral fins; while the Bermuda Hump-backed (*M. Americana*) frequents the seas around the "still-vext Bermoothes," and the *M. Paskop* is found at New York.

The Rorqual belongs to the genus *Balænoptera Physalis*, or *Rorqualus*.

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CHAPTER II.

THE TWO WHALERS.

I.—LONG AGO.

Frederic Martens — His Departure from Hamburg — Spitzbergen — The Whaler's Weapons—The Fishery—Melting the Blubber—Return Home.

TOWARDS noon, on the 15th of April 1671, a small three-masted Hamburg vessel issued from the mouth of the Elbe, bound on a voyage towards the North Pole. It was a whaler, baptized by the absurd name of *Jonah in the Whale*, and commanded by Peter Peterson of Friesland. On board, in the capacity of surgeon, sailed Frederic Martens, a very intelligent, truthful, and keen observer, who has bequeathed to us a curious narrative of his voyage. From this narrative it is that we shall borrow the groundwork of our present chapter, building upon it by means of authentic documents of the same epoch.

The *Jonah* was by no means a marvel of swiftness; but swiftness is not the quality we seek in a whaling-ship. What is indispensable is, that its stout sides should easily resist the shock of floating masses of ice, and that it shall

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not roll heavily; for, otherwise, it would be impossible to manœuvre in the dangerous regions of the Polar seas, or to cut to pieces without excessive difficulty the whales moored alongside the vessel.

On board were embarked the necessary munitions and implements: sixty lances, ten great harpoons, forty smaller ones, thirty cables (each eighty fathoms long), and so on.

We know that the harpoon consists of two parts: the *iron* is a metallic rod with a broad extremity, and hollow like an elongated funnel; while the other extremity is a kind of A. The outer edges of this A are very sharp, while the inner are thick and straight, so that once it has penetrated into an animal's flesh, the iron head, retained by its two points, cannot be detached. Sometimes the head is of a different form, but this, after all, is but a modification of the former. The best harpoons are those which have not been too much tempered, and which will bend without breaking. For want of a good harpoon, a whaler may sometimes lose £200; for such is the calculated value of an average-sized whale. In the hollow portion (or *douille*) of the head is introduced the wooden handle, which diminishes in size as it tapers towards the other extremity. At a short distance from the socket, the handle is perforated with a hole, which is useful in consolidating the rope attached to the harpoon. This rope is six or seven fathoms long, and one inch in thickness; it is made of the finest and softest hemp, and is not pitched, so that it may preserve its suppleness, and

ANCIENT HARPOON.

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not cause any deviation of the weapon when it is launched against the whale.

Lances are too well known for any description to be necessary. On the deck of the *Jonah*, six shallops were firmly moored, and a crew of thirty or forty men were engaged in various occupations. The captain, the surgeon, and two or three mates composed the governing body; the crew was divided into harpooners and rowers—the former receiving forty to fifty florins per month, the latter fifteen to twenty.

In some whaling-ships each man receives for his wage a share of the profits; but as a rule they voyage at the expense of some speculator, who pays them monthly wages, besides a bonus for each whale captured or each barrel of fat collected.

As soon as his ship had gained the open sea, the master reviewed his crew. The accountant and himself repaired to the cabin, and as soon as he had received his gratuity and first month's wages, he summoned, one after the other, all those who had engaged themselves.

We can easily conceive that discipline was not maintained without difficulty among these men, so unaccustomed to repress their passions, leading a rude and fatiguing life, subjected to all sorts of privations, and sometimes separated by religious opinions, which were in that age peculiarly fervent; for we must not forget that it was then the eve of the religious wars, and that for fifteen years the persecution of the Huguenots had continued.

So, to prevent all disorder, the company which despatched the whaler-ships required each man, before em-

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barking, to sign the curious engagement of which we give a translation below :—

CONTRACT BETWEEN THE COMMANDER AND CREW WHO ARE ENGAGED FOR THE GREENLAND FISHERY.

"We, the undersigned, officers, seamen, and others, have engaged ourselves at Hamburg, on board the ship *Jonah in the Whale*, from the .... day of the month of .....1671, promising to serve in the navigation, fishery, &c., of Greenland, and in his default, in case of death or any painful accident, to his successor, whether on board or on the land, to the conditions subjoined, to which we declare ourselves subject :

"1. That we will be present punctually at morning and evening prayers, on penalty of a fine such as the commander shall be pleased to fix.

"2. That we will be prudent and sober, avoiding drunkenness and all disobedience, whether against our officers or amongst ourselves, under penalty of losing one half our wages.

"3. That any person having a quarrel with another, if he should come to blows and wound him, will lose his wages, and be punished according to the exigencies of the case.

"4. It will not be permitted for any member of the crew to traffic in aught relating to the whale, under a penalty of twenty-five florins.

"5. If the commander should undertake any copartnery fisheries, we promise to assist him, under the penalties above decreed for disobedience.

"6. We promise to be content with the food which shall be given us by order of the commander, under the above-mentioned penalties.

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"7. If through shipwreck, or the length of the voyage, or any other unfortunate accident, it should happen that the provisions fail, we will be content with such a distribution of provisions as the commander shall order, under the above penalties.

"8. We promise not to keep our fires, candles, wicks, &c., alight without the consent of the commander, under the above penalties.

"9. The commander promises and engages to satisfy and recompense, according to the custom of the country from which the vessel sails, any one who shall chance to be injured in the vessel's defence.

"10. Whosoever shall learn or discover any evil design against the vessel, &c., shall be held bound to denounce it, and shall be recompensed for his fidelity.

"11. All cases omitted in the foregoing shall be decided according to the usages and customs of the sea.

"Done at Hamburg, the .... day of the year 1671."

Let us return to our voyage.

The *Jonah*, then, sailed from Gluckstadt on the 15th of April. On the 27th, it passed in sight of the island of Jan Mayen. It is necessary here to record that the Company, on the 26th of August 1633, had sent out, for the purpose of wintering in this island, some robust sailors. But when, in June 1634, a ship came to re-embark them, there were found only seven frozen corpses, and a pathetic, melancholy diary, terminating on the 30th of April, at which date four men were alive, but half devoured by scurvy. From this journal it was ascertained that in the month of February these regions were frequented by a prodigious quantity of enormous whales.

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The *Jonah* did not delay at Jan Mayen, but pursued her voyage towards Spitzbergen. "Every day," says Frederic Martens, "we saw several vessels navigating among the ice. I remarked that, in passing one another, the mariners indulged in mutual exclamations, crying *Hola!* and asking how many fish they had caught: sometimes they exaggerated. When the wind was so violent that they could not hear one another, they made signs with their hats.....When they have obtained a full cargo, they hoist the great flag to make known the fact to others, who thereupon entrust them with commissions for Europe."

The cargo varied according to the size of the ships. The largest carried from 800 to 1000 *kardels* (or *quarters*); the smallest, from about 400 to 700.

On the 7th they fell in with Spitzbergen; and on the 9th sighted a cetacean, which at first they mistook for a right-whale. The boats were all lowered and ready for the chase, when they recognized, by the crescent-shaped fin near its tail, that it was a rorqual, or *hump-back*. As this cetacean is very difficult to kill, sinking to the bottom of the sea almost immediately, and as it furnishes much less oil than the Greenland whale, our seamen abandoned the idea of attacking it.

On the following days the *Jonah* began to look about actively for whales, approaching, and alternately receding from, the ice,—in a word, exploring the whole region. On the 14th a whale was seen at no great distance from the vessel. Four boats were got ready for the attack; but she sank under the water, and showed herself no more. This is a rare occurrence; generally, after having remained concealed for a time, she comes up to breathe at a short distance from the place of her first

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appearance. In order to be all ready for the chase without a moment's delay, as soon as the ship had arrived in the waters of Spitzbergen they hung their boats from the bulwark along the side of the ship. At the mast-heads look-outs were always kept in search of dead whales floating on the sea, and whoever signalled one received a ducat for his reward.

The moment a whale was seen, the cry was raised throughout the ship, "Below! below!" and everybody sprang into the boats, each into the place allotted to him. There were generally six men in each boat, but sometimes seven. Until they got very near the whale everybody rowed, except the pilot, who guided the boat by means of a large oar; but then the harpooner issued from the rank of the rowers, and placed himself in the prow, while another sailor held himself ready to watch over the rope attached to the harpoon. In each boat three harpoons, six lances, hatchets, and the like, were always kept in their proper places.

On the 20th the cold became so great that the sea was almost entirely frozen over. The reader must not think, however, that at this epoch the frozen regions were deserted. Nine other ships prowled about our whaler; and on the following day, when the *Jonah* entered the ice, in company with a Hamburg ship, to moor herself to an enormous island of ice, Martens counted thirty vessels which were likewise moored. Penetrating into the midst of the ice-fields, our seamen found themselves sheltered in a kind of haven; but on their own avowal this conduct was rash, for they exposed themselves to be surrounded and caught among the banks.

On the 30th of May a whale was heard to "blow."

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THE "JONAH" AMONG THE ICE.

Immediately the boats pursued her; and when, by dint of hard rowing, they had overtaken the animal, the harpooner arose, seized his harpoon, signalled for the crew to

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stop rowing, brandished it a moment, and hurled it. The murderous weapon flashed through the air like an arrow, and implanted itself in the body of the gigantic cetacean a little behind the ears. The whale immediately plunged, carrying with it both harpoon and rope. It drew with so much force, that though the rope was paid out with all possible rapidity, the bow of the boat was sunk nearly to the level of the water. In the boat were several coils of rope, each measuring one hundred fathoms in length. In proportion as the whale dived, more rope was fastened on, and when there was no rope left in the boat, additional coils were borrowed from the others. In spite of all these precautions, the boat was rapidly carried through the waves; and a man was compelled to pour water incessantly on that part of the gunwale over which the rope uncoiled, from fear that the intense friction might set it on fire.

Meantime the other boats made all haste to gain the spot where they presumed the whale would again make his appearance. The time passed, however, and the animal did not reascend. Astonished, the sailors looked around on every side, until they saw a great number of sea-birds whirling and sweeping to and fro; immediately they made towards this point, and found the monster launching through its blow-holes a double column of blood. The sea was incarnadined. It was at this point the real danger began.

While the boat moored to the whale hauled upon its rope, and so advanced, though always keeping in the monster's rear, and at a reasonable distance from the tail,—the other boats approached almost near enough to the sides to touch them, and the harpooners with their spears dealt a succession of heavy wounds, thrusting in their

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weapons wherever they could, but specially endeavouring to strike the vital points.

The animal was greatly agitated, striking the waves with its tail, blowing violently; but soon exhausted by the loss of blood, it grew feeble; a general shudder convulsed its body, its frantic movements made the sea boil, it lifted up its head, it looked towards the light for the last time, and it died.

The seamen raised a cheer of triumph. Their prey floated with belly upwards. The tail was cut off, the body attached to the stern of one of the boats, which, being all moored in a line, towed it to the *Jonah*.

To the fishery succeeded the operation of cutting-up. The whale was fastened with ropes alongside, its head reaching to the shrouds of the mainmast—that is, to the centre of the vessel.

Two boats only remained afloat, and these ranged themselves on either side of the whale. In each stood a man, who with a boat-hook kept the boat alongside the ship, and a harpooner, clad in garments and leggings of leather. From time to time the latter, as they cut out the fat with immense long knives, climbed upon the whale, supporting themselves by sinking wedges into its hide. To facilitate the operation, the whale was raised or lowered by means of pulleys set in the rigging.

The harpooners began by removing the skin behind the head, near the eyes, and then, tracing a ring around the animal, they removed a portion of hide and fat. The moment they had begun to cut this slice, they made a hole in the fat to fasten it to a thick rope, which, passing over a pulley beneath the main-yard, succeeded in hauling it upon deck. The first breadth or ring cut away, they cut

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numerous slices longitudinally, and all these were gradually got on board.

There the seamen took them in hand, and cut them into very small squares, which were handed to another lot of men, seated round a table, that the hide might be separated from the fat. Finally, another whaler divided the fat into thin slices, and cast them into a wooden trough, whence the cabin-boy let them slide into the hold of the ship. There they were piled up in barrels.

As soon as one side of the whale was completely stripped, the upper jaw was removed, with its baleen plates, and hoisted on board; then the men cut off the tongue; turned the animal round, and continued operations.

It was thus that the *Jonah* captured her first whale, and began her loading. The result was, according to Martens, about 70 kardels of fat.

"This very night Cornelius Seamann lost his ship in the ice, which surrounded and crushed it in pieces..

"On the morning of the 4th of June we were again in pursuit of a whale, and approached so close that the harpooner was on the point of smiting, when it suddenly sank under water, letting itself drop, so to speak, like a stone; it plunged tail downwards.....This day we were several times in chase of whales without being able to capture one."

On the 13th our mariners saw upwards of twenty whales swimming in company among the ice. They captured a male, which furnished 65 kardels of fat.

On the 14th they sailed past Magdalena and Hamburg Bays; in English Bay they hunted a whale. Struck by three harpoons, wounded by several spears, it collected all its strength to escape, diving and swimming incessantly,

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and frequently plunging under the ice. At length, the harpoons breaking, our adventurers lost it.

The third capture was made on the 22nd of June. All the boats were in chase of a whale, when a harpooner, seeing another near him, hurled his harpoon, which drove home. It made towards the ice, and struggled there a long time before dying. The ice-blocks had so closely surrounded it that the other boats, having been compelled to abandon the first whale, could not come to the harpooner's assistance. Finally the ice separated, and left a passage open. The fat of this animal filled 45 hogsheads.

On the 29th the crew picked up an image of Saint Nicholas floating on the water; the figure-head, probably, of a wrecked vessel.

On the 1st of July two whales, male and female, were fallen in with. The female, when harpooned, did not dive, but continued to swim on the surface of the water, compelling all the boats—which, to check her progress, had been moored to one another—to separate quickly in all directions. A harpooner having ventured near, was struck in the back by the whale's tail. He fell, stunned and breathless, but was fortunate in escaping so cheaply! The crew of another boat, anxious to show that in courage they were not inferior to this harpooner, also advanced too close, and their boat was capsized. They were obliged to swim for a disagreeably long period in the half-frozen water.

The whales were so very numerous, that, not to lose time, the seamen cut up into great squares only, which

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they threw into a special compartment, the fat of a whale killed on the 2nd of July.

On the 4th a male whale yielded 45 kardels of fat; on the 5th another, a female, gave the same number. On this day of success a third was harpooned; but the rope, in the animal's various evolutions, clinging to a rock, the harpoon lost its hold.

On the 6th, close by their ship, a Dutch vessel was cutting up a whale, when it burst with a report like that of a cannon. It frequently happens that the gases engendered by the animal's putrefaction expand and dilate it until it bursts.

On the 9th another capture: a male.

On the 13th the *Jonah* passed the keel of a vessel which had been engulfed in the waters while sailing eastward. On the 15th it dropped anchor in South Harbour, opposite Smeerenberg.

Smeerenberg was formerly a Dutch commercial depôt of some importance. Every year the outward-bound ships conveyed thither persons of various trades, who remained during the fishing season. According to certain old authorities, cafés were to be found there, and all the luxuries of Amsterdam. The special object of the settlement was to facilitate whalers in melting their fat. Hence came the very name of the village (*schmer*, fat). This melting process took place on the other side of the arm of the sea, in a kind of suburb, named the *Harlemer Cookery*. But as early as the visit of Martens, the establishment had fallen into sore decay, and now not a trace of it can be discovered.

A few Basques, however, still melted their fat at this place; but the French whalers practised the operation on

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board their own vessels, while the Germans carried home the fat itself.

The fat is boiled in enormous copper caldrons. As, under Louis XIII., the English and Dutch prevented the French fishermen from disembarking, either in Spitzbergen or in Greenland, to transform their fat into oil, they endeavoured to do it out at sea. To François Soupite, of Sibourre (in the department of the Lower Pyrenees), the idea occurred of heating the furnaces and boilers with the help of the oily fragments previously thrown away. Thanks to this fortunate innovation, the fishermen realized a considerable profit. For not only was the oil made in this way of a superior quality to that made with rank fat, but their cargoes were lightened of a mass of refuse which occupied the space of the Hamburg vessels.

Frederic Martens was necessarily unacquainted with the process of François Soupite, for it was as yet a secret; and imagining that the French carried a whole cargo of fuel, he censured them for so useless a procedure. A more accurate objection which he makes to the old method is the danger of fire. We shall see by-and-by how this casualty is now guarded against.

The *Jonah* had completed her season, and was soon to quit Spitzbergen. When she sailed from Smeerenberg, thirty vessels were lying at anchor in the South Harbour.

On the 22nd of July she turned her bow towards Europe, and on the 29th of August was off the mouth of the Elbe.

Not a single person on board had had an attack of scurvy; a circumstance not surprising, if it be correct, as Frederic Martens affirms, that when one works, one can never be ill: "The idlers in this voyage are liable to

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scorbutic attacks; but those who fear neither air nor wind, and are always in activity, will almost always escape them."

The voyage had lasted four months and a half—from the 15th of April to the 29th of August—during which the crew of the *Jonah in the Whale* had captured eight fish, and collected about 420 kardels or 26,600 gallons of fat.

As we have said, Frederic Martens estimates that the whales are worth, taking one with another, £220. The eight whales, therefore, brought to the speculator or ship-owner a sum of £1760; out of which, it is true, he had to pay his crew £300 for wages, and a certain premium or bonus on the number of whales captured and barrels filled. Deducting every charge, however, his profit would not be less than £1100.

II.—AT THE PRESENT DAY.

Doctor Thiercelin—Departure from Havre—The Weapons—New Caledonia—The Fishery—Melting the Fat—Homeward Bound.

Now let us pass over two centuries. It is the 7th of April 1863. From Havre sails a whaling-ship, the *Gustave*, Captain Gilles, belonging to a young and able ship-owner of the town, M. Emile Bossière.

The *Gustave* is an old whaling-ship, and consequently a sailing-vessel; a fact now becoming rarer and more rare, since the majority of ships now destined to this service are screw-steamers, and are thus better able to hunt down the whales, since they need take no account in their movements of wind or currents.

The *Gustave* carries on board of her a physician—Dr. Thiercelin, author of the "Journal of a Whaler"—who is desirous of testing the value of a fishing process of his own invention.

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"No habitation on earth," says the doctor, "can be compared to a surgeon's cabin on board a whaler. In a space of 26 to 32 cubic feet, into which air and light do but scantily filter, you must place your bed, your trunks, your wash-hand-stand, a looking-glass, a library, a medicine-chest, a writing-desk, pens, paper, a gun, and all the apparel of a hunter, hats, shoes, boots, even wooden shoes; a waxed cape; and, above all this, the curiosities collected in the course of the voyage—a little here, a little there."

The reader can imagine how much care, nay, how much *talent*, our young physician must have required to arrange such a variety of contents methodically.

The *Gustave* steered for the southern hemisphere, and not towards Spitzbergen. The seas of the North have for a long time been deserted. Or, at the most, a few ships, from Dundee or Peterhead, persist in frequenting Davis Straits. And these are compelled to undertake a double task: from March to April they hunt the sea-calf in Greenland, and in May pursue the whale in Davis Straits.

The work to be done upon deck excludes all possibility of hatchways and the like. No projections can be seen but the top of the staircase, the caboose, the furnace for melting the fat, and the binnacle.

The ship sighted Madeira, without putting into its harbour, and sailed past the Canaries. The whaler does nothing, and sees nothing. The single occupation of the voyagers for two months was that interminable promenade of ten paces forward and ten paces backward, which makes them resemble wild beasts in a cage. On the 20th of June they arrived in sight of Tasmania.

Alas! there was nothing to do in the neighbourhood of Van Diemen's Strait, and the ship, to the doctor's great

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regret, kept out at sea; but on the 20th of July, when they dropped anchor in the Coral Sea at Chesterfield, in the heart of Oceania, O what happiness!

Among the isles composing this reef is that of Turtles, where ships can take on board an entire cargo of those savoury crustaceans. Opposite the Island of Turtles lies that of Birds, covered, so to speak, with a layer of sea-birds' eggs.

The *Gustave* had at length reached its centre of operations. It is in these parts, and in the gulfs of New Caledonia, that the Austral whale is caught.

The officers, in search of cetacea, quit the ship daily at an early hour, directed by their caprice or their hunting instinct.

There were nine ships in the bay, of which two were French, and the others English or American. Each despatched four boats to the fishing, manned by an officer, a harpooner, and four rowers. Frequently the captains bring from Europe neither weapons nor harpooners, but hire utensils and men in New Zealand, where numerous seamen (deserters) have established themselves, who enter into an engagement for the season, and provide the requisite weapons.

Each boat is well furnished with spears and harpoons, and carries besides a whaler's carbine and a supply of projectiles.

The spear is very much what it was in the time of Frederic Martens, but the harpoon has been modified: the point alone is fixed; the two flukes turn upwards, so that they can close in upon the handle while the harpoon penetrates into the fat; then, when the weapon is introduced, they spring apart like the two rays of a fan, and lock the harpoon in the cetacean's body.

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The whaler's carbine is short, thick, and heavy, like a cavalry soldier's musket.

The projectiles for this weapon differ among different nations.

The most generally favoured, and the first invented, is the American *bomb-lance*. This engine consists of an iron tube, 12 to 16 inches in length, by ½ to ⅝ inch in diameter. The tube is filled with about three and a half ounces of hunting-powder. It terminates at the top in a triangular pyramid, with hollowed or grooved faces, and very sharp angles and point. The end joins, by means of a screw, to a much narrower tube enclosing a match, one extremity of which plunges into the powder, and the other shoots past the projectile to communicate with the charge of powder in the gun. When the trigger is let go, the latter sets fire to the match, at the same time that it projects the ball destined to explode in the body of the animal.

THE EXPLOSIVE BALL.

At a later period, M. Devisme conceived the idea of introducing the *explosive ball*, which he had invented for the chase of wild beasts, into the whale-fishery. The explosive ball, however, can be used only in rifled weapons—weapons, that is, whose interior is spirally grooved. Now, let the reader imagine a tube of copper, terminated by a cone of steel, and shut by a screw. The cone is pierced throughout, so as to communicate with the tube. Over the opening is set a capsule; the ball is filled with powder; and when the projectile touches a resistant sur-

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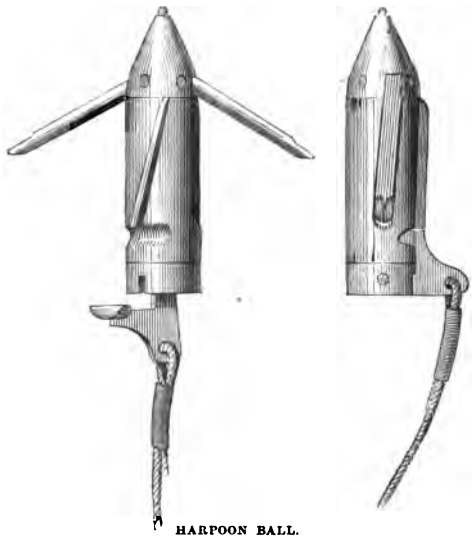
face, like the hide of a large animal, the percussion explodes the capsule, which sets fire to the powder, and the bomb splits to pieces inside the body. Those of sufficient size to kill a whale cost about ten shillings, and contain three drams of powder.

But, as the reader will see at a glance, before this invention can be useful, the whale must be harpooned.



HARPOON BALL.

Therefore, M. Devisme conceived the idea of completing it by combining the harpoon with the bomb. In a note, which M. Devisme has kindly prepared for us, he thus describes his projectile:—

"The harpoon ball is also an explosive ball: it carries two winglets (*ailettes*) concealed in the thickness of the

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ball; these open at the moment of the explosion in the animal's body, and form the harpoon. The ball carries a cord, attached to a perforated hinge in its posterior part, and the other end of this cord is coiled up in the boat, so that it may be run out with the necessary quickness. The effects of these balls are terrible. Loaded with the ordinary powder, they are neither dangerous to carry nor use. They may be filled with fulminating powder; but though the explosion is stronger with the latter, it has no advantages, and is always accompanied with danger."

We must add that a steel rod connects together the winglets and the stem.

Unfortunately, if the explosive balls, of whatever they may be compounded, do indeed kill the whale, death does not take place immediately. To secure this result, prussic acid has been unsuccessfully attempted. Dr. Thiercelin, however, has discovered, with the assistance of Wurtz, the celebrated chemist, a poisonous substance of so much potency that an ounce and a half mixed with the powder of the ball will strike down in a moment the largest whale. It was upon this invention that he wished to experiment.

Very often, in the morning, when the female whales regain the high sea, after having started their little ones on an independent career in the tranquil creeks, the officers remaining on board the *Gustave* would see one of them captured by the whalers; but fortune was against them, and the whalers were not their own.

Several times they wounded the whales, but the latter always escaped.

At last, the captains of the *Gustave* and the *Winslow*, weary of incessant failures, decided on tempting fate in other regions, and hoisted sail. They directed their course

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towards the reef of Lihou; but, deceived in their hopes, were compelled to return to Chesterfield. Those readers who may be curious to know the details of their voyages are referred to Dr. Thiercelin's work.

At Chesterfield, the *Gustave*, on this occasion, was a little less unfortunate.

A first whale was nearly secured. They fired three shots at it, one of which struck; by mistake, the bomb was not poisoned; the whale hastened out to sea, and they were compelled to cut the line.

After a dozen unsuccessful attempts, in which they were afraid to use either balls or bombs, a whale was harpooned. The animal was full of vigour when struck by a poisoned ball; five minutes afterwards, it was dead.

One day, the mate of the *Winslow* had secured another whale, against which the officers of the two ships had vainly discharged a succession of bomb spears. All the projectiles were aimed too high or too low. At length, they even gave up the use of their muskets, and killed the whale with their ordinary spears. But while the bombs thus missed the targets against which they were directed, one of them accidentally penetrated the belly of a companion of the struggling cetacean. Under the ordinary conditions, the wound would have been trifling; but the bomb was poisoned, and in a few minutes the animal perished.

So great is the force of routine, that the officers were compelled to conceal from the seamen the fact that the balls were different from those they habitually made use of, or they would have refused to cut up the whale.

At the end of September the *Gustave* made for the open sea, to try her fortune on the coast of Australia, while

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waiting for the New Zealand season, and carrying on board the small quantity of oil she had collected.

The old fishers of the North cut up the whale in long strips; to-day, the whalers adopt a more ingenious and rapid process. They take up a strip or thong of fat, spiral-wise, from the head to the tail, just as we peel an apple. They separate, with sharp-edged spades, one of the sides of the lower lip; next, they remove the tongue; afterwards the other half of the lip; next, the upper jaw and its baleen plates. Finally, they commence cutting a thick ribband of fat and skin, which they continue to detach by degrees, as it is hauled on board ship; in this way the whale is cleaned out, so to speak, its body rotating on itself, just as the haberdasher makes the small wooden reel revolve on which his cotton thread is wound.

By a felicitous invention, the use of the furnace or caboose for melting the fat has been rendered comparatively free from danger. The base of the modern furnace no longer rests directly on the deck, but is separated from it by a space in which water is kept circulating, whose evaporation maintains a constant temperature *below* 212°, and prevents the timber from igniting.

We need only add that our voyagers, after many other adventures, returned to France, having successfully proved the value of Dr. Thiercelin's invention.

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CHAPTER III.

THE SEA-UNICORN.

THE NARWHAL—ITS DESCRIPTION—ITS TUSK.

THE *Sea-Unicorn*, or *Narwhal*, is a great cetacean, which frequently measures from 26 to 30 feet in length, and is met with only in the Polar seas.

Like the whale, the narwhal breathes through its vents; but instead of possessing separate orifices, its vents unite in such a manner as to exhibit only a single opening, which a fringed and movable valve closes whenever the animal so wills.

The belly of this cetacean is white, the back a darkish gray. We shall speak by-and-by of its strength and agility, which are remarkable; but we must first dwell upon its most conspicuous character, its dentition, which has induced us to include it among the Monsters of the Deep.

There is no one, we suppose, who has not heard of the tusk of the narwhal, which was formerly supposed to be identical with the horn of the fabulous unicorn.

This tooth or tusk is sometimes upwards of 8½ feet in length: at its base it is as thick as a man's thigh, and

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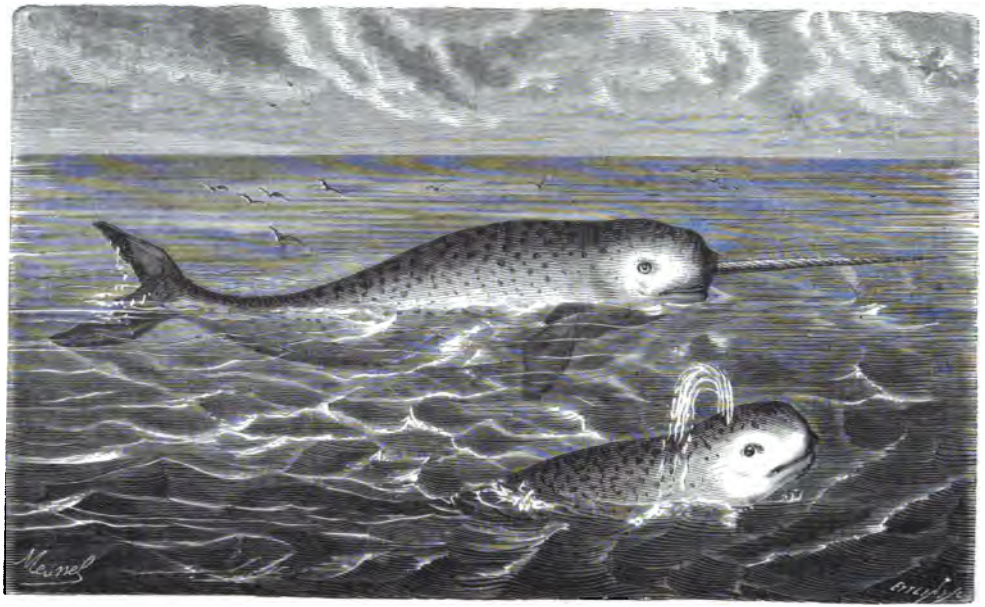

NARWHALS—MALE AND FEMALE.

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from thence it tapers towards the extremity. Its ivory is very beautiful, very white, and coiled spiral-wise. At the base it is hollow.

Wormius relates that a King of Denmark, wishing to make a present of a fragment of the narwhal's tusk, instructed his "grand master" to cut it from the lower extremity of an entire specimen which he had the good fortune to possess. The grand master obeyed: "having sawn off a portion of the horn which he thought solid, he met with a concavity, and in this concavity was astonished to see another small horn, of the same figure and the same material as the large one. He continued to saw all round the large horn without touching the small, and found that the latter was pushed forward, in the same way as the concavity, into the large for about a foot, and that the remainder of the large one was solid."

The narwhal's tusks, thanks to the superstitious ideas of our ancestors, were the object of a traffic of some importance: and when Arnaud, the Bishop of Greenland, was wrecked on the coast of Norway in 1126, many were found among the waifs and strays of the lost ship.

The male alone possesses this formidable weapon, and the female generally exhibits nothing more than a couple of teeth of very small dimensions, incapable of service in a struggle against any other animal: however, Scoresby caught one whose tusk was three feet in length. But this fact is exceptional.

WHY IT HAS BUT ONE TUSK—THE LAW OF EQUILIBRIUM OF ORGANS.

No animal has a single tusk projecting in front of the mouth; these organs are always two in number. There-

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fore it naturally appeared very astounding that the narwhal had but a single tusk; it seemed that he ought to have had two at least.

Such a reflection was by no means unjust, and observation confirms it. The narwhal *has* two tusks, and these are inserted on the outer part of the upper jaw. Only, one of these grows and enlarges prodigiously, and the other remains very much shorter, or even is completely atrophied,—a fact easily explained by the law of equilibrium of organs.

Saint-Hilaire has demonstrated that no one part whatever of a living being can attain a great development unless one or several other parts diminish in volume, or even disappear.

What Nature wastes on the one hand, says Goethe, she is compelled to economize on the other.

Thus, the feet of serpents being abortive, the body is considerably prolonged; while in lizards and other reptiles provided with paws, the body is proportionately much more corpulent.

When tadpoles are transformed into frogs, the feet elongate in proportion as the tail diminishes.

"When the hinder limbs," says M. Charles Martins, "are immeasurably developed,—as in kangaroos, gerboas, and leaping hares,—the fore limbs become so small that they no longer touch the soil. The animal leaps on its hind paws, and when set upon supports itself on its tail."

Thus, then, it is quite natural that when one of the tusks becomes so disproportionately long, as in the narwhal, its companion will disappear.

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HABITS OF THE NARWHAL—ITS BATTLES WITH THE WHALE.

We have before us a strange beast, shaped somewhat like a porpoise, with one tusk—a single tusk—thick as a ship's yard, six and a half feet long, and sharpened like a pike.

To see it so well armed, you would suppose it to be a terrible animal, killing and devouring everything it meets with. Such is not the case, for its mouth is small, and very badly constructed for mastication.

The narwhals feed upon molluscs and small fish;* they live in numerous bodies, sporting about, and swimming slowly.

But, on the other hand, the swiftness of solitary individuals is described as very considerable.

They would scarcely be caught, even with the greatest difficulty, but for their habits of seeking shelter in narrow creeks, and voyaging together in large herds. The boats can then, with great caution, approach their long files.

* Dr. Scoresby has written upon this subject a passage which deserves to be related:—"My father," he said, "sent me the contents of the stomach of a narwhal killed at several leagues distant from us, and which appeared to me quite extraordinary: it consisted of a few half-digested fish, and of the bones of others. Besides the beaks and other remains of *sepiadæ*, which apparently constitute the general groundwork of its nourishment, it had part of the spine of a *gade*, a kind of cod; fragments of the spine of a *pleuronectes*, probably a small turbot; the vertebral column of a *ray*, with another ray of the same genus, evidently the *raie batys*, nearly entire. This latter was 2 feet 3 inches long, and 1 foot 8 inches wide; it comprised the bones of the head, of the back, and the tail, the lateral fins, the eyes, and a considerable portion of the muscular substance. It appears remarkable that the narwhal, an animal without teeth, with a small mouth, and non-flexible lips, and a tongue which appears unable to issue from its mouth, should be capable of seizing and swallowing so great a fish, whose width is thrice as great as that of its own mouth.....It seems probable that the ray had been pierced with the tusk and killed before being devoured; otherwise, it would be difficult to imagine how the narwhal could seize it, or how a fish of such activity would allow itself to be captured and swallowed by a smooth-lipped animal, without teeth to seize it, and without any means of retaining it."—*Dr. Scoresby's "Voyages in the Arctic Regions."*

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They close together, they press one against another, mutually paralyzing the movements of their fins, embarrassing themselves with the tusks of their neighbours, and raising their heads aloft in the air. They neither fly nor fight; and die, without defending themselves, under the spears of the whalers.

The Greenlanders eat their flesh; their fat affords an excellent substitute for whale-oil, and their teeth a useful ivory.

In the sixteenth century weapons, knives, swords, and the like, were made out of the narwhal's teeth, sharpened upon a stone.

Dr. Scoresby, during his voyage to Greenland, met one day with a troop of narwhals, divided into herds of from twenty to fifty. The males were more numerous than the females; in their gaiety they raised their tusks above the water, crossed them, producing a noise like the *glouglou* of water in the throat, and followed the ship, amusing themselves with the rudder.

It would appear, however, that they are not always in so good a temper, and that they sometimes attack and destroy the whale itself. Voyagers even say that, mistaking the keel of the ship for the king of the cetaceans, they have been known to hurl themselves against vessels with prodigious strength and swiftness; their tusk penetrating the timber, would occasion a great leak, if it did not itself fill up the hole it has made.

If the narwhal strike the hull laterally, thanks to the progress of the ship, the ivory breaks off near the side; but if it attacks the stern, it finds itself caught and nailed so that it cannot move. In such an event it dies and putrefies, to the great annoyance of the seamen, who find

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the speed of their course considerably checked, without their deriving any advantage.

La Martinière relates a narwhal hunt of which he was witness. "After we had been three days without catching anything," said he, "we saw two large fishes come forward, one of which had a horn of considerable length; and our fishermen prepared to catch them. Approaching within a stone's throw, our harpooners flung their weapons,

NARWHAL HUNTING (*facsimile of an engraving of La Martinière's*).

slackening the ropes to which they were fastened, hauling them in diligently, as shown in our illustration.

"Having got alongside, seeing that the fish floated on the water, which is a sign of feebleness, they drew them in little by little—nor did they offer any resistance, having no strength, and having lost all their blood—and then the cutters discharged their duties, cutting off the head, which

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we took care of, and flinging the body into the sea, as it was not fit to eat and yielded no oil,—these fish being caught only for the sake of their tusks.

"A boat having approached too near, the second fish, on feeling itself wounded by the harpoon, struck it with its tail so violently as to capsize it; and as the crew of the other shallop could render no help, two seamen were drowned, which grieved us greatly. The fish was taken. It had no horn, but, as a recompense, its teeth were of a considerable size."*

In the year 1843 the Museum at Paris acquired a magnificent skeleton of a narwhal, furnished with its tusk, which is now exposed to the public in the Galleries of Comparative Anatomy. You have but to examine these remains to understand how great must have been the agility and strength of the living animal. That slender, flexible body seems made expressly for natation. You can detect the traces of one of the teeth—the abortive one—and the manner in which the other was set in its socket.

THE UNICORN—SUPERSTITIONS CONCERNING THE NARWHAL.

Long before the narwhal was known, its tusk was known in commerce as the horn of the *licornis* or the *unicorn*.

According to ancient writers, this latter name was applied to several kinds of animals—such as the *oryx*, the *Indian ass*, and the *monoceros*, which are all terrestrial, and inhabit the South. The first writer to speak of a sea-unicorn was Bertholin, a Dane, in his "Treatise on Unicorns."

Under this name, then, for a long period were sold

* De la Martinière, "Voyage des Pays Septentrionaux," ed. 1682, p. 260.

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the teeth of the narwhal, which Greenland furnished in abundance. The abbey of St. Denis possessed a pair celebrated for their dimensions and beauty, which formerly belonged to the Museum of the Faculty of Medicine at Paris. The largest was 7 feet long, and about 15 inches in circumference at its base. There existed a yet larger one at Fredericksburg, in the treasury of the King of Denmark.

Our ancestors attributed to the ivory mysterious correlations with the poisons, in virtue of which, not only was it a sovereign and infallible antidote, but also a powerful and admirable agent whose sole presence would remove from venomous substances all their dangerous properties, and foil every criminal attempt at poisoning.

The learned and subtle creator of modern surgery, Ambroise Paré, relates a conversation which he held with Chapelain, first physician of Charles IX., in reference to this subject.

"One day, speaking to him of the great abuse which took place in using unicorn's horn, I besought him, in virtue of the authority which he held near the person of the king our master, owing to his great knowledge and experience, to exercise his influence in abolishing its employment, and above all, the custom of leaving a fragment of *licorne* to soak in the king's drinking-cup for fear of poison. He replied, that so far as he himself was concerned, he saw no virtue in the unicorn's horn; but that the trust the people put in it, and in similar remedies, was so confirmed and long-rooted, that though he would willingly have prohibited them, he did not think he had sufficient power."

Ambroise Paré then endeavoured to persuade him to

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write upon the subject; but the prudent Chapelain refused, asserting that any one who set himself against the popular opinion seemed to him like an owl which makes its appearance by day; the other birds run upon him, and kill him, and when he is dead they think no more about him. But the bolder Paré did not hesitate to combat openly this foolish superstition; and did it so skilfully, that, from his time, no one ventured to confess his secret belief in the virtue of the unicorn as a counter-poison or antidote.*

Out of these tusks many articles were fashioned by the turners,—as, for instance, the beautiful cane incrusted with mother-of-pearl which is (or was) shown to visitors at the Versailles Library.

It was Wormius who first pointed out their real origin.

"Some years ago," he wrote to La Peyrère, "being with M. Fris, the great chancellor of Denmark, I complained to him of the want of curiosity on the part of our merchants and mariners who went to Greenland, in not informing themselves as to the animals whose horns they brought over in such abundance; and in not securing some specimens of their skin and flesh, so that we might obtain some knowledge respecting them. 'They are more curious than you think,' the chancellor replied; and he immediately brought me a great dry skull, to which was attached a fragment of this kind of horn, fully four feet long. It was with great pleasure I beheld a thing so rare and so precious. I found that the skull bore a great resemblance to that of a whale; that it had two holes on the top, and that these holes penetrated into the palate; that they were undoubtedly the two tubes through which the animal ejected the water which it drank. And I remarked that

* Ambroise Paré, "Œuvres Complètes" (ed. 1664), p. 808.

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what was called the horn was attached to the left side of the upper jaw. Having received information that a similar animal had been captured in Iceland, I wrote to the Bishop of Hole, named Thorlac Scalonius, who had been my disciple at Copenhagen, and begged him, as my friend, to send me the portrait of this beast; which he did, and informed me that the Icelanders called it *narualh*—that is, 'the whale which feeds on dead bodies,' because *hualh* signifies a whale, and *nar* a carcase."*

More lately, in 1671, Frederic Martens put on record a sufficiently accurate description.

All the popular errors regarding this animal were, moreover, carefully cherished by the Greenland Company, which held to some extent a commercial monopoly of the Arctic lands. These merchants were well aware that the obscurity in which the origin of the teeth was involved raised their price. Of this fact the following anecdote is a proof:—

In 1636 two ships, despatched by the Company to Davis Strait, purchased from the natives several fragments of narwhal's teeth, which they brought back to Copenhagen.

A short time afterwards one of the associates of the Company repaired to Russia, obtained an interview with the Czar,—Alexis Michaelovitz, father of the illustrious Peter the Great,—and offered to sell him his narwhal-teeth.

They were, said he, the actual horns of the *licorne*, of that animal spoken of in Holy Scripture, which Aristotle and Pliny had described, and whose existence no one, without being accused of impiety, could pretend to doubt.

Alexis readily believed every word which the merchant

* La Peyrère, "Relation du Groënland" (1716), p. 102.

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said to him, and greatly admired these pretended horns,—especially an enormous fragment, valued at 346,800 francs,—and he was on the point of purchasing them, when the idea occurred to him of first submitting them to his physician's examination.

The latter was a learned man, not so easily imposed upon as his sovereign. He studied attentively the objects laid before him, and recognized that they were, not *horns*, but *teeth*.

The Czar declined the bargain, and the disconcerted ambassador returned to Copenhagen without having sold anything.

When giving an account of his journey to his associates, he threw all the cause of his misfortune on that wicked physician, "who had chosen to deny his merchandize, and assert that his wares were merely the teeth of a fish." "You fool," replied one of his associates, "why did you not give a couple of hundred ducats to the physician; he would then have seen the unicorn's horns!"

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CHAPTER IV.

THE DOLPHINS.

HOW DOLPHINS ARE MADE—DR. DARWIN'S THEORY—HABITS OF DOLPHINS.

SOME mariners had gravely offended Bacchus, who had presented himself to them under the form of an infant, and whom they had seized and forcibly carried away. The god resolved upon revenge. He resumed his divine figure; he called to his side panthers, and tigers, and terrible spectres; in his hands appeared his thyrsus, adorned with vine-branches. He brandished it, and lo! ropes and sails were covered with vines. Seized with giddiness and fear, the sailors flung themselves headlong into the waves. Immediately they were metamorphosed. Medon was the first whose body began to take to itself fins, and to bend into the shape of a bow; Lycobas was quickly transformed in the same manner. Libys endeavoured to ply his oar, but saw his hands contract, and change into fins. Another attempted to seize the ivy-bound cables, but had no longer arms; he sank to the bottom of the sea, and his body was curved and bent like a bow, and terminated in a tail

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like to a hedge-bill or the crescent of a moon. In all directions they leaped, and threw up fountains of water; they dived and reascended alternately, they swam in troops, gave themselves up to a thousand sports, and through their wide nostrils ejected two sparkling shafts of silvery spray.

Such, according to Ovid, was the origin of the dolphins. We of to-day do not believe in metamorphoses, and the fables of the Greco-Latin mythology find us completely incredulous. And yet, in making of the dolphin a degenerate man, it may be that the Latin poet was not far from the truth, if it be true that man descends from the same ancestor as the dolphin!

And is not this, in fact, a natural consequence of the theory which has so long occupied the attention of the scientific world? In his elaborate and logical work, "On the Origin of Species," Darwin has attempted to show that all species of animals descend from a very small number of types, which, in the course of time, must be modified and diversified *ad infinitum*. Then, following up his course of argument, he ends, in the last pages of his work, by confessing that he sees no difficulty in tracing the primordial species themselves from an unique species. "Analogy," he says, "would lead me to the belief that all animals and all plants descend from a single prototype; but analogy may be a deceitful guide."* From this point of view, which has found a very large number of admirers, man, the cetacean, and the mollusc, must undoubtedly proceed from the same ancestor.†

* Darwin, "On the Origin of Species."

† Perhaps we may here be allowed to refute, in passing, an opinion attributed to Darwin in numerous works, which has alienated from him many minds. It is asserted that the great naturalist says that man is the son of the ape. He says no such thing. He says that man and ape descend from a common prototype, but nowhere that this prototype was an ape.

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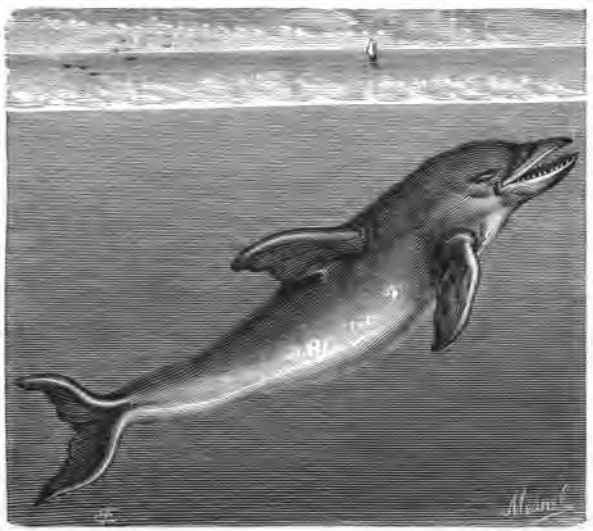
Is it not frightful to think that in eating a dozen oysters, it is possible we are devouring a dozen cousins!

But we had better not attempt to sound the depths of such intricate questions, and we return without delay to the description of the animal which is the subject of our present chapter.



DELPHINUS DELPHIS.

The common Dolphin (*Delphinus delphis*) is an aquatic mammal, a cetacean, inhabiting every sea. It is of rather small dimensions (10 to 13 feet), with a rounded head, and a prominent muzzle shaped like the bill of a goose or a swan. Its form is ungraceful in outline; the body is thin and slender; the tail very flexible, very movable, and deeply cleft.

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Its jaws are set with pointed teeth—spaced out in such a way that, when the mouth is closed, the teeth which supply the lower portion close in between those embedded in the upper gum. In the eye may be seen, on a background of gilded yellow (as in the case of the cat, the bear, and the lion), a black ball shaped somewhat like a heart.

As in the case of all the cetaceans, the dolphin breathes through vents situated on the top of the head, above the eyes. At the orifice, its two respiratory ducts unite together; and the opening resulting from this is a crescent, the points of which are turned towards the muzzle. When it breathes strenuously, it produces a peculiar sound,—a kind of lowing. Its ear, perfectly shaped, permits it, moreover, to apprehend the slightest noises.

It swims with great swiftness; and Bernardin de Saint-Pierre relates that, during his voyage to the Isle of France, he saw a dolphin caracolling round the ship, while the ship was sailing at the rate of nearly six and a half miles an hour.

The rapidity of its evolutions has frequently been observed; it seems as if repose were unknown to it: incessantly it wheels, and swims, and bounds, and dives; dashes on before the vessel; retraces its course and abandons itself to a thousand turbulent pastimes.

When it wishes to leap, the dolphin curves its body violently, taking the form of an ∽, curving its tail like a large and powerful bow, and afterwards unbending it: then, all of a sudden, it gives a spring, an impulse, which carries it above the water, and projects it like an arrow for a considerable space.

The dolphin is a carnivorous animal, and of great vora-

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DOLPHINS PURSUING A BOAT

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city. If it swims around the ships, it is solely for the purpose of feasting upon the refuse of all kinds which the seamen throw overboard. It is too timid to attack man, though it wants neither the will nor the ferocity.

Compared with the shark, in whose company it is often found, it may seem gentle and amiable to travellers affrighted by the terrible *squalus*. In this circumstance undoubtedly originated all the legends which the Greeks have handed down to us respecting its philanthropy; seeing it constantly in the wake of their vessels, and not seeking to fathom the motives which may have led to this conduct on its part, the Greek sailors readily believed that it accompanied them only through an instinct of sociability. It is by no means probable that music can so charm its ear as to retain it, a captive, to listen to the songs of women and the sweet sounds of the harp! We may more readily conceive that musicians attracted the dolphin by indicating, through the full strain of their voices or the clash of their instruments, the ship which carried them to the attention of some cetaceans previously ignorant of its whereabouts.

Like wolves upon the land, the dolphins hunt in a pack in the waters. For whole days, wandering troops pursue the vessel, cross its track, sweep ahead of it, dive under its keel, disappear, and return to recommence their sports.

OF VARIOUS SPECIES OF DOLPHINS—THE COMMON DOLPHIN.

Let us now say a few words respecting the various species of the dolphins.

The most common has the back black, the belly a mother-of-pearl white. We have described the shape of its head, in which has originated the vulgar surname of *bec-d'oie*, or

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goose's-bill (*Delphinus delphis*). It carries from ninety to one hundred teeth in each jaw.

These dolphins generally appear in groups of five or six individuals, though as many as twenty have sometimes been seen.

They are fished for with a line. Audubon assures us that when one of them has been tempted by the bait, and caught on the hook, all its companions approach and surround it,* until it has been hauled upon deck. Then they retire together.

This takes place, however, only when we have to do with adult individuals, cunning and mistrustful; they keep apart from the young, as is the custom among several species of birds. On the other hand, if we have to deal with a shoal of young ones, they will all remain under the vessel's bow, and will continue to bite, one after the other, as if each were eager to see what had become of its comrade; and in this way they are all captured.

The common dolphin frequents the ocean and the Mediterranean, where it is even abundant. And to this species we ought to refer, in all probability, the fables of the Greeks.

It is difficult, however, to come to a decision in this respect; for besides that the Mediterranean is inhabited by various other species, the ancients have confounded sharks with cetaceans in their descriptions, and have rendered them unrecognizable. Thus, they believed that the mouth was situated underneath the body, as in the Squalidæ; and thought that, for this reason, they were obliged to lie on their side, or to turn themselves, when they wanted to eat.

* Pliny says that a dolphin having been caught by the King of Caria, and chained in the harbour, its companions came in great numbers, whirling incessantly around it, until the king restored it to liberty. This is not impossible.

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In the "Hydrography," a "Treatise on Navigation," by Père Fournier, the Jesuit, occurs a curious anecdote of these animals.

On the 1st of September 1638, fifteen French galleys, commanded by the Marquis de Pont-Courlay, were preparing to engage, off Genoa, an Hispano-Sicilian fleet, comprising the same number of ships, but better armed, and carrying, besides the ordinary *personnel* of rowers and sailors, three thousand five hundred soldiers.

Let us now hear the old historian's own words:—

"Orders having been received, each man took his post; and the commander of the fleet was already in the centre of his fourteen galleys, when suddenly eighty or a hundred dolphins appeared on the water, and ranged themselves around his ship—bounding from the waves, gliding from bow to stern, darting towards the enemy, and performing a thousand tricks; which made the whole crew raise a lively shout of 'Long live the king! we shall have a dauphin!'—seeing, in this sudden and unexpected encounter with the king of fish, who took their side, not only a presage of approaching victory, but, yet more, a certain omen that the queen would be happily delivered of a son and heir. And, in fact, four days afterwards was born Monseigneur the Dauphin—Louis XIV.

"Their joy was so extraordinary, that they took courage to make an immediate demand for arms, and asked permission to deserve, by a gallant and desperate achievement, the liberty which they (being galley-slaves) hoped to receive at the dauphin's birth; and monsieur the general having ordered several to be unfettered, it was seen that galley-slaves could be metamorphosed into good and loyal soldiers, who contributed not a little to the victory: in

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consideration of which, in the month of November following, six men in each galley were set free."

The prognostications which seamen draw from their meeting with dolphins are very contradictory. According to some, these animals love the storm; they take a delight in struggling against the elements, in leaping upon the crests of the agitated billows; and their approach announces a gale. According to others, as the *avant-couriers* of a fresh breeze, they hasten to salute the goodly ship, and their arrival should be considered a fortunate presage.

Between these two opinions we confess ourselves embarrassed; and the simplest plan is, to believe neither the one nor the other.

THE ORC.

The largest species of dolphin is the Orc (*Delphinus orca*). It is thirty-two feet in length, while the goose-beaked species is not more than six and a half.

An individual was caught in the Thames, in 1787, which measured twenty-six feet; and one of eighteen feet in the Loire, in 1793.

These two instances show that it ascends the rivers.

Its colours resemble those of the preceding species, and it differs from them only in having a whitish, crescent-shaped mark behind the eye.

The orc is the most ferocious of cetaceans; it attacks the whale, and feeds upon seals.

A shoal of orcs pursues the king of the cetaceans, harasses him on every side, and bites him vigorously. The whale, from want of flexibility, cannot turn; and having no courage to defend himself, and being embarrassed by

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his weight, seeks safety in flight. He struggles to gain the open sea, and to put the ocean between him and his enemy. But the orcs will not abandon him, and resolutely oppose his passage. They arrest his course, they drive him up into the creeks, and constraining him at length to open his enormous mouth, devour, it is said, the tongue of the still living monster!

In a preceding section we have reproduced a very curious design from the book of Aldrovandus upon fishes, representing one of these encounters. It shows how little scrupulous were the ancient naturalists as to any resemblance of the animals they professed to delineate. This whale with tusks, feet, and necklet,—and these dolphins with their elastic backs,—form masterpieces of ignorant simplicity.

Professor Eschricht, of Copenhagen, having been informed that an orc had come ashore on the isle of Jutland (August 1, 1862), hastened to the spot to dissect it, and found in its stomach, undigested, *thirteen porpoises* and *fifteen seals*.

At the present time we meet with this dolphin throughout the wide ocean, from Spitzbergen to Panama, but it is no longer seen in the Mediterranean. In the time of Pliny this was not the case, and the Roman naturalist was present at a combat which the Emperor Claudius undertook with one of these monsters in the port of Ostia:—"It had entered while the workmen were busy in the harbour, being attracted by the wreck of a vessel which brought some hides from Gaul."

THE BLACK DOLPHIN.

The third species of dolphin we would wish to notice here is the *Globiceps* (*Delphinus niger*) of Ocean.

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Like the migratory fishes, it swims in a shoal, under the direction of a single leader. If the latter should go ashore, all the troop would fling themselves beside him.

By this strange peculiarity the fishermen do not fail to profit. In their boats they drive the leader to land, whither all his companions follow him. It was in this way that, on the 7th of January 1812, some fishermen of Ploubazlanec, near Saint-Brieuc, captured seventy black dolphins. As they lay extended on the sand, their moans were fearful. There were seven adult males among them, fifty-one females, and twelve young. The most vigorous lived for five days; it measured nearly twenty feet in length.

Ninety-two were stranded in Scapay Bay in 1806; and in 1805 three hundred and ten were equally unfortunate on the shores of Shetland.

Finally, Dr. Scoresby asserts that he has met with shoals containing more than a thousand individuals.

It is known that the ancient inhabitants of Thrace and Byzantium hunted the dolphin with tridents attached to long ropes, like our modern harpoons.

Of late the dolphin fishery has been neglected for the whale fishery. It is carried on, however, and even on a tolerably large scale, by the inhabitants of the Cochin-Chinese coasts, and the Faroe Islands.

When a crew of Faroe fishermen discovers a shoal of dolphins, which generally happens out at sea, they hoist in all haste a sailor's waistcoat at the mast-head. At this signal, all the boats of the neighbourhood hasten to gather round the shoal, or *grind*, and drive it towards the coast.

Sometimes the tumultuousness of the cetaceans is so great that, after having attempted for several days to keep

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them in a fixed direction, the fishermen are compelled to abandon their enterprise.

If all goes well, a boat rows rapidly ashore to announce the approach of the *grind*, and immediately everybody makes ready to share in the spoil, with shouts of—

"A shoal of dolphins! *Grindebo! Grindebo!*"

The men hasten to their boats armed with long, broad-bladed knives, suspended to the belt, like those of butchers; and harpoons, the iron head of which is not less than one foot, and the handle not less than twelve feet in length. The governor of Thorshaven sets out at their head, in a shallop carrying the Danish flag, and manned with a crew in uniform.

Meanwhile the *grind*, surrounded by a semicircle of boats, advances rapidly towards the gently-sloping shore. You would think, says Captain Irminger, a Dane, when you see the great crest of foam produced by the rapid natation and respiration of the cetaceans, that a "bore" or "spring tide" was rushing full upon you.

As the boats approach the dolphins, they grow more and more alarmed; on all sides they seek to break through the semicircle which incloses them, and it is with great difficulty the fishermen, with volleys of stones, prevent them from taking to flight.

As soon as the shoal is not more than 950 to 1500 feet from the bottom of the bay, the men stationed in the bows of the foremost boats begin to launch with a vigorous hand their terrible harpoons, withdrawing them afterwards by means of the rope. The water turns red; the dolphins leap to and fro; the battle has begun.

Battle! we ought rather to write "massacre," for not one of the cetaceans escapes. Those not wounded mortally

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by the harpoons are finished with the knife; while troops of fifty and sixty, whirling around without knowing what they do, and wild with fear, seeing but one direction in which escape becomes possible, rush hastily ashore, on the sand, where they are killed by a blow on the neck.

The largest *globiceps* is the share of the boat's crew who first observed the *grind;* and the look-out man who first made the discovery receives as his reward the head, which is the fattest part of the animal. Portions are also set apart for the king, the church, the poor, the owner of the shore, and the wounded fishermen; then the remainder is equally divided among all the men.

On the following day the boats return to their harbours, loaded each with its share of the spoil.

The flesh and a part of the fat are salted or dried to serve for domestic consumption. A dolphin yields about a barrel of oil.

From 1833 to 1863, 37,986 dolphins were killed at Faroe; the largest capture took place in 1852, and was composed of 852 individuals.

Each barrel of oil is now worth from £3, 12s. to £4; formerly its cost did not exceed from 25s. to 30s. Nearly the whole produce is sold at Copenhagen.

The vertical leaps of the dolphin, the abrupt pulls it gives to the rope which detains it, render it very difficult to take by line; it nearly always breaks away.

THE DOLPHIN OF FABLE—ITS STRUGGLES—ITS FRIENDSHIPS—ARION, ETC.—APOLLO AND DELPHOS.

Let us now pass on to the Dolphin of Antiquity.

Observe, in the first place, that this animal was by no means clearly defined, and that the ancients confused with

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its adventures those which they borrowed from other aquatic beings.

Such is the combat recorded by Seneca:—"Babillus, that excellent man, of an erudition so unusual in every branch of literature, asserts that he saw, during his government of Egypt, at the Heracletic mouth of the Nile, the largest of the seven, some dolphins coming from the sea, and a troop of crocodiles descending the river to encounter them, and that a kind of regular battle took place: the crocodiles were conquered by these pacific adversaries, whose bite is harmless. All the dorsal region of the crocodiles is hard and impenetrable to the tooth even of far stronger animals; but the belly is soft and tender. The dolphins, by diving, prevailed over them with the projecting saw which they carry on their back, and in their upward leap completely eviscerated them. Many crocodiles were killed in this way; the others wheeled round and saved themselves by flight."

This Babillus, we may venture to remark, does not inspire us with any great confidence, and we strongly suspect that the defence of the mouth of the Nile by crocodiles is a worthy pendant to the battle of the rats and mice.

Nevertheless, as almost every fiction has its foundation of fact, it is probable that Babillus, and the other historians who related these crocodilian Odysseys, conceived the idea of them because they had seen some fish armed with a spiny dorsal fin. Now that of the dolphin is as smooth as possible; hence, our authors cannot be referring to it. But in the Mediterranean there are two sharks (*Squalus spinax* and *S. centrina*) which possess, at the anterior portion of each of their two dorsal fins, a very hard, very strong, white, and nearly triangular hook. Nay,

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more: the first hook of the *S. centrina* is strongly bent towards the head, and consequently this fish can thrust it into the belly of any animal whatever that swims above it. It seems, then, very evident that this shark, which is four and a half feet long, had been shown to Babillus, and that he had called it a dolphin.

Let us pass on.

Under the imperial sway of Augustus, says an old tradition, a dolphin which had passed into the Lucrine Lake, conceived the liveliest affection for the child of a man of the people. This child went frequently from Baiæ to Puzzuoli to school. At noon, the hour of recreation, the dolphin was accustomed to come at his voice, and the child threw him some pieces of bread which he brought for the purpose. At whatever hour of the day the child called him, even if he were concealed at the bottom of the waters, he would make haste, and after receiving from his hand the portion intended for him, he presented his back; then he carried him to Puzzuoli across the sea, and brought him back in the same manner. At length the child was taken ill, and died; the dolphin continued to come to the rendezvous, but he wore a sad and chagrined air. Soon afterwards he himself died; and no one doubted but that it was owing to his regret at seeing his young friend no more.

In this graceful legend the genius of Greece is revealed in all its beauty. For the Greeks, inhabitants of a fertile and picturesque land,—for them, whom the sun warmed incessantly with burning rays tempered by the cool sea-breezes, and who knew nothing of the heavy rains nor of the dark forests stripped bare by winter,—for them all nature was bright and laughing. More lately, we see that it would

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be possible, up to a certain point, to attribute to the seal a portion of the anecdotes fathered upon tamed dolphins; but even, in admitting this version, we must own that they were still very greatly embellished, and that they preserved a strong savour of Hellenism. So that, as Lacépède has very well said, "If the dolphin of nature belongs to all climates, that of the poets belongs only to Greece."

Stories analogous to those we have just mentioned are innumerable.

At Hippone, in Africa, a dolphin received in the same manner his food from the hand of men; he allowed them to handle him; sported with the swimmers; bore them on his back. Flavinius, Proconsul of Africa, rubbed the poor beast with an unctuous essence. Overcome probably by the novel odour, he floated for some time upon the water, and gave no sign of life; at last he recovered his senses, and as if wounded by an outrage, for awhile avoided human society. In the end, the annoyances the inhabitants experienced from men of rank and influence attracted to Hippone by curiosity, determined them to put to death their favourite.

A dolphin having gone ashore near Iassus, it was supposed he had leaped upon the sand in following a child who played about the beach.

"I have myself seen at Paroseliné," says Pausanias, "a dolphin which, wounded by fishes and cured by a child, showed its gratitude; I have seen it come at the child's voice, and, when the latter desired, would act as a steed to carry him whither he wished."

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Pausanias, however, is the only writer who professes to have seen with his own eyes the miracle he describes.

But it would not suffice to assert that the cetacean loved children, and played with them willingly; it was necessary to show that he could render himself useful.

Some dolphins,—by accident, undoubtedly,—being found in the neighbourhood of fishers whom a stroke of fortune favoured, it was thence concluded that these animals assisted man to fish.

Many of our readers will be familiar with the fantastic fishery which Pliny describes as taking place daily on the Mediterranean coast of France near Nîmes:—

"At a certain epoch of the year, a prodigious quantity of mullets pours seaward through the narrow mouth of the Laterine pond.

"These fish select the moment of the ebb, and thus prevent the fishermen from stretching their nets; which, moreover, would be incapable of containing a mass so enormous. Guided by the same instinct, they direct their course towards the open sea, and make haste to escape from the only locality where a net could suitably be laid.

"The inhabitants, acquainted with the epoch of this emigration, and attracted, moreover, by the amusement of the fishery, assemble upon the shore. Spectators and fishermen, all re-echo from afar the cries of *Simo*, *Simo*. The dolphins soon understand that they are wanted. The north wind carries the sound of the shouting voices towards them. The south wind is contrary. But sooner or later, according to the wind, these faithful auxiliaries hasten to put in their appearance. You would think you saw an

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army approaching, which, without delay, takes up its position in the place where the action is to come off. They close the sea against the mullets, which, in their panic, turn back towards the shallow waters. Immediately the fishermen surround them with their nets, which they support upon poles. The mullets, nevertheless, cross them with an eager spring. The dolphins pounce upon them; and content, for the moment, with having killed them, they wait to eat them until the victory be finished.

"The action is maintained, and pressing the enemy with ardour, they willingly allow themselves to be shut up together; and to the end that their presence may not make them fly, they glide imperceptibly between the boats, the nets, and the swimmers, in such wise as to leave no passage. Though naturally fond of gymnastic feats, not one of them attempts to escape until the net is lowered; then issuing from the enclosure, they recommence the battle. When the last fish is captured, they devour those that have been killed; but knowing that they have worked so well as to deserve more than a day's wage, they present themselves again on the morrow, when they are satisfied, not only with fishes, but also with bread soaked in wine."

Imagine this! a dainty for dolphins! bread soaked in wine!

The idea is ingenious. One seems to remember Molière:—

"*Sganarelle.*—Let him take for a remedy a quantity of bread soaked in wine.

"*Géronte.*—And why, sir?

"*Sganarelle.*—Because in the bread and wine mixed together exists a sympathetic virtue of great effect for making people speak! Do you not see that nothing else

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is given to parrots, and that through eating this they learn to speak?"

The ancients did not stop here; they were going forward in too agreeable a path. If the dolphin followed ships, it could be for no other purpose than to pick up and save the shipwrecked seamen. No one doubted their capability of carrying men on their back. Witness Hermias, a young man of Iassus, whom an unforeseen tempest had destroyed while he was voyaging across the sea in this manner. Religious traditions concurred to favour these wild flights of the imagination, and both poets and naturalists made haste to celebrate and glorify this most curious deliverer:—

"Un navire en cet équipage
Non loin d'Athènes fit naufrage,
Sans les dauphins, tout eût péri.
Cet animal est fort ami
De notre espèce: en son Histoire,
Pline le dit, il le faut croire."

[A ship, 'tis said, near Athens went ashore,
And but for kindly dolphins all had died;
True friends and brave are they of mankind, for
Our Pliny says so, and he never lied!]

Everybody knows the story of Arion.

This Greek poet, after having collected in Italy immense riches, wished to return to Corinth, his birthplace, and freighted a ship for the purpose. When out at sea, the sailors resolved to kill him and seize upon his treasures. In vain he attempted to soften his executioners, and at length, abandoning all hope, he asked as a last solitary favour, that he might be allowed to sing one song before he died. His music, however, had no more effect on their hardened hearts than his prayers, and Arion threw himself into the sea. A troop of dolphins, however, had been attracted by the sweet spell of his melody; one of

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them received him on its back, and carried the poet to the promontory of Tenarus, whence he repaired to Corinth. The tyrant Periander, informed by Arion himself of the crime and the miracle, arrested the seamen as soon as they landed, and crucified them. Apollo metamorphosed into a constellation, and thus rendered immortal, the dolphin which had saved Arion.

THE CULTUS OF THE DOLPHIN—THE DOLPHIN OF THE HERALDS.

Apollo was adored at Delphos, not only under the names of *Delphic* and *Pythian*, but also under that of *Delphinian*. He was thus surnamed because under the form of a dolphin he had shown himself to the Cretans, to guide them to the shore where they founded Delphos, the most celebrated oracle of the universe.

Nor was Apollo the only god whom the dolphin assisted in his adventures. For instance: Amphitrite had always repulsed Neptune, and fled from him. Neptune sent a couple of dolphins in search of her. They found her at the foot of Mount Atlas, placed her in a car of pearly shell, and in this fashion conveyed her to the powerful king of the seas, who married her.

To carry off the nymph Melantho, Neptune assumed the figure of a dolphin; and it was under this form he was worshipped at Sunium.

Finally: to indicate the supremacy of love over the earth and the wave, the divine boy was represented with flowers in one hand, and a dolphin in the other.

A dolphin was placed recumbent at the feet of Venus. It was twined around a trident to symbolize the freedom of commerce.

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The Gallic chiefs took it as their emblem, and the Christian legends relate that the bodies of St. Arlan and St. Theoticus, martyrs, were piously carried ashore by dolphins.

And though to-day we have ceased to worship the dolphin, there exists *one* aspect under which it still impresses very vividly men of a certain order. It is no longer over faith, but over vanity that it extends its empire. I refer to the dolphin considered as an heraldic animal.

Emblazonry did, in truth, make great use of it; though it must be owned that the figure delineated in our armorial bearings no more resembles that of the dolphin which our whalers catch, than that of the sculptors and painters.

In the terms of the heraldic code, the dolphin is *allumé*, *lorré*, or *peautré*, according as the eye, the fins, or the tail are differently enamelled from the remainder of the body. When it is of a single colour, with jaws yawning, and ready, as it were, to expire, it is called *pâmé;* if the head and tail extend towards the lowest part of the shield, it is *couché;* it is *vif* if it is represented in profile, and bent in a semicircle towards the right.

The title of "Dauphin" was employed of old to designate the Counts de Viennois. It was borne for the first time by Guigues IV., who lived in the twelfth century; and the most ancient text which mentions it is an Act confirmed between this lord and Hugues II., Bishop of Grenoble, in 1140. In 1342, a descendant of Guigues, Humbert II., abandoned, or rather sold, his territory to the King of France, stipulating, as everybody knows, that, beginning with the grandson of Philip VI. (who became Charles V.), the eldest son of the kings of France should

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bear the title of Dauphin. The last prince thus qualified was the Duc d'Angoulême, eldest son of Charles X. The province formed out of the territory of Humbert took the name of Dauphiné, which it did not lose until the Revolution.

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CHAPTER V.

THE CACHALOT, OR SPERM-WHALE.

DESCRIPTION OF THE CACHALOT—ITS HABITS—SPERMACETI.

IF the Cachalot be not the bulkiest of the cetaceans, it is, at all events, one of the longest, and frequently attains the extraordinary measurement of 100 feet.

But what renders it specially extraordinary is the vastness of its head. This is truly beyond all moderation, and forms at least one-half its size. In front it resembles a great truncated mass, somewhat in the shape of a cube; so that one would suppose the resistance offered to movement by this immense vertical surface would render its locomotion slow.

Quite at the extremity of its muzzle is a solitary vent. The lower jaw is furnished with teeth; and it is on account of this characteristic that we ought to place the cachalot above the whale, like the dolphin and narwhal, because it indicates a more perfectly organized animal. Opposite each tooth is found, in the upper jaw, a hollow adapted to receive it when the animal closes its mouth.

"In deglutition," says Dr. Thiercelin, "the tongue

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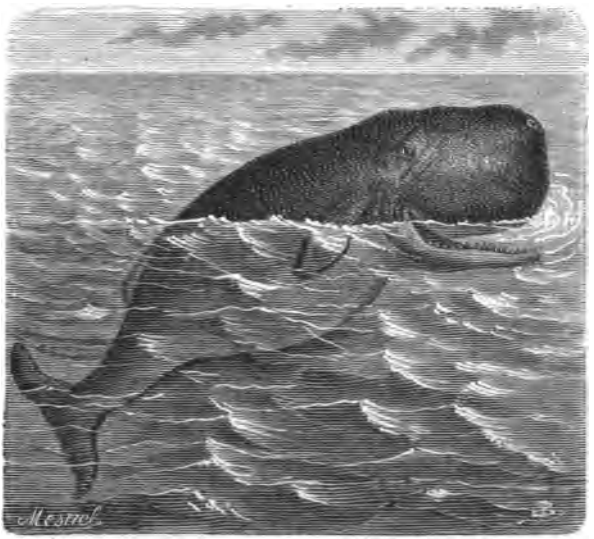
plays the principal part: it expands itself in front, drives out all the water which occupied the capacity of the jaw, and clings round the prey as the tongue of an infant clings round the nipple of its mother's breast. Soon the animal slightly loosens its jaws, aspires strongly, and engulfs the fish in its œsophagus. The pharynx is closed by the base of the tongue when the throat is open; but as the



THE CACHALOT.

jaw closes, the tongue expanding in front sinks behind, and a fish of comparatively large size can enter into a channel whose sides are elastic, and which closes immediately deglutition has taken place." The reader sees that here, as in the whale, the animal swallows no water.

The eye is situated just above the corner of the lips: it

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is small; and Anderson asserts that in an individual of this species, driven into the Elbe by a great tempest in 1720, and which was more than 25 feet long, the crystalline of the eye was no larger than a musket-ball. The eyes, set upon small protuberances, are prominent, so that in spite of its huge head the cachalot can see before it.

A little beyond the eye is the ear, whose aural duct it is very difficult to detect.

Behind the head, the trunk forms a squat cone, which terminates in a broad flat tail, distinctly divided into two lobes. The place of the neck is marked by a swelling, instead of a depression.

Like the porpoise, the cachalot swims by striking the water with its tail, sometimes moving forward in a horizontal line, sometimes performing incessant somersets—and this more especially when it is terrified.

It feeds only upon molluscs and small fish; therefore they have need of an immense mouth to seize a sufficient amount of food without difficulty. But, on the other hand, the head would then weigh too heavily in relation to the body, if it were shaped like that of other cetaceans; and the cachalot would experience great difficulty in rising to the surface to breathe. But, as everybody knows, the head contains a considerable cavity in its upper portion, from the muzzle to a point above the eyes; and this cavity is filled, not with solid matter, but with a light oil—which solidifies on exposure to the air, and forms *spermaceti*. The cavity is divided into two compartments; the one above the palate being sometimes eight feet high. It is covered by numerous teguments, a layer of fat, and the skin.

Owing to the position and arrangement of the vent,

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the jet of pulverized water, vapour, and mucus which issues from it falls, not upon the back, but in front of the animal. It is extremely easy for an experienced eye to distinguish at a distance the blowing of a cachalot from that of a whale. "The latter may be compared to a beautiful white plume; that of the cachalot to the light grayish clouds escaping from a steam-engine in intermittent puffs.....A short, noisy expiration, frequently repeated,—the production of a cloud formed like a semicircle, and remaining but for a very short time in sight: these are the principal characters of the 'blow' of the cachalot."

The cachalots are met with in every sea, but their true country is the torrid zone. They live frequently in troops: swimming, said our ancestors, under the regal direction of a chief, so true it is that in nature the beasts themselves perceive the necessity of having a king; but, say the moderns, swimming haphazard, and without guide, wherever an abundance of food attracts them.

AMBERGRIS.

Their food, as we have already said, consisting in the main of cephalopods, which generally possess a musk-like odour, it is not astonishing that the products of their digestion preserve this odour. It seems probable to us that the digestive juices do not dissolve the odorous principles of these molluscs, and that the latter, assuming continually a greater concentration, eventually develop into calculi, and solid deposits of an extremely strong smell. Certain it is that in the intestines, and among the dejections of the cachalots, we find a well-known musk-like substance, *ambergris*.

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"Ambergris," wrote, in 1675, the illustrious chemist, Nicolas Lémery, "is a kind of bitumen found in many places on the seashore.

"We believe that it comes from the Oriental seas, though it has several times been found on the coasts of England, and in numerous other parts of Europe. The largest part is found on the coast of Melinda, chiefly at the mouth of the river called *Rio di Sena*."

This opinion was held, with scarcely any modification, down to these later times, and Swédiaur was the first to maintain that ambergris was an intestinal product of the cachalot. Yet, even in 1741, a lump of ambergris weighing eleven pounds had been discovered in the body of a whale driven ashore at Bayonne, but the discovery did not open the eyes of the scientific.

Sometimes scales of fish and remains of cephalopods are found embedded in ambergris. Its colour is a blackish gray, frequently concealed by efflorescences of white; its form, that of irregular masses with concentric layers, or agglomerated granules. These masses vary from two to twenty ounces in weight, but are sometimes much more considerable. A cachalot of Bayonne yielded one of eleven pounds; a sailor secured forty-four pounds from another individual; and one hundred and twenty pounds from a third. In 1695 the Company of the Indies possessed a lump weighing one hundred and sixty pounds; and Valmont de Bomare saw an enormous concretion, weighing two hundred and twenty pounds.

It is pretended that foxes, according to Frédol, are very partial to ambergris, and that they resort to the seashore in search of it. They eat it, and restore it much in the same condition as when they swallowed it, if we refer to its per-

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fume only, though greatly altered in colour. To this cause is attributed the existence of some fragments of whitish ambergris in the Aquitanian Landes. Locally, they are called *ambre renardé*, or *fox's ambergris*. This is a fact we should think it was very difficult to establish!

THE FISHERY — PRODUCTS OF A SPERM-WHALE — OIL — IVORY — ADIPOCIRE.

The sperm-whale fishery being conducted exactly like that of the ordinary whale, we do not think it necessary to weary our readers with a twice-told story.

Only this cetacean, instead of flying, or allowing itself to be attacked without any attempt to save its life, defends itself with energy, opens wide its enormous jaws, ready to shut close again and crush both men and boats, and especially striking and clashing with its head,—powerful as an ancient ram, and capable of sinking a ship: the *Essex* was lost in this way. It is a dangerous antagonist for the whalers; and hence it is, in hunting the cachalot, that use is made of *American spears* and *Devisme balls*.

When the cachalot has been well harpooned, in spite of its abrupt movements, it soon exhausts its energies and dies; it is then brought alongside the ship, and the work of cutting it to pieces commences. The fat is removed; the spermaceti collected from the head in ladles; and the teeth extracted; then, by a deplorable carelessness due to a blind obedience to routine, the remainder is abandoned without any attempt to save the ambergris which the entrails contain, though it is of enormous value in perfumery.

The fat of a sperm-whale, when melted, does not yield much oil: the product rarely amounts to more than twenty to twenty-five barrels. Sometimes, but very rarely, the

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whalers capture a *solitary* whale—that is, one which lives alone—and obtain from it as much as 120 barrels of oil.

As the spermaceti, or rather adipocire, grows cold, it becomes solid. It may then be described as a kind of transparent, crystallized wax, very unctuous to the touch. M. Quoy has calculated that a cachalot of the Moluccas, 60 feet long, will yield 24 barrels.

To obtain pure congealed adipocire, it is collected in a woollen bag, then boiled in an alkaline lye which cleanses it of all fatty materials, and allowed to cool in cakes. It is used for the manufacture of candles and tapers. Unfortunately, its price is so very high that it cannot be employed in a perfectly pure condition, even for the costliest tapers.

As for the tusks or teeth, they are cylindrical and pointed at the summit, somewhat curved in form, about eight inches long, and of a rather indifferent ivory. Nevertheless, seamen and the Polynesian savages hold them in high esteem. Porter, who visited Nouka-Hiva in 1823, wrote:—"A ship of 300 tons may complete, at Nouka-Hiva, a cargo of sandal-wood for ten sperm-whale's teeth; and this all the more easily because the natives do not spare any trouble to go and cut it in the most distant districts, and transport it to the place of embarkation. Now, a cargo of this kind will sell in China for a million of dollars (five millions of francs)."

And, at the present time, too, according to the author of the "Last Savages," the inhabitants of the Marquesas Islands say to the whalers when soliciting them for gifts:—"Manu, bring me some red stuff, some collars, and some sperm-whale's teeth."

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THE SEAS WHERE THE CACHALOT IS FOUND—A FISHING ADVENTURE.

As we have said, this cetacean is of all seas. It appears, however, not to have been known to the ancients. Its common name (*cachalot*), given to it by the inhabitants of the west coast of France, signifies "whale with teeth." At intervals some individuals of this species still drift upon the French shores.

In 1784, thirty-two individuals, nearly all females, were stranded on the beach near the Bay of Audierne in Finisterre. On the 19th of January 1767, one was captured in the Bay of the Somme, near St. Valery. We have spoken of the cachalot wrecked at the mouth of the Avons, at Bayonne, in 1741. And about eight years ago (October 1866), two of these creatures were lost on the English coast; and M. Esquiros assures us that they abound in the waters of Ireland.

However this may be, it is in the seas of Japan, the Moluccas, India, and the Coral Sea, that the few English and American adventurers who still engage in this hazardous fishery pursue the cachalot.

A surgeon on board a whaling-ship has described an episode of the fishery, which seems well worth recording, from the light it throws upon its character.

"On the afternoon of a day which had been somewhat tempestuous, some young spermaceti-whales appeared near the ship, and as the weather had a little cleared, the captain ordered the second officer to lower the boat; the same order was given on the other side, with a view to pursue these animals.

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"The two boats were instantaneously launched; we had but two, the others having been dashed to pieces on the day preceding. The men immediately drew near the whales, but were seen by the latter before they could get sufficiently within reach to throw the harpoon with any chance of success. In consequence, the band of whales separated and dispersed in different directions with great swiftness. One of them, however, after having made several turns, came straight towards the captain's boat. The latter waited in utter silence, and without moving an oar, until the whale was close to his boat, when the harpoon was launched, and hit him directly behind the hump. I myself saw the weapon enter into the cetacean's flesh. For some seconds the whale appeared struck with terror; then it recovered itself, darted off like the wind, and towed the boat with so much impetuosity—hauling the rope, of which one end was fastened to the harpoon, and of which the other was in the fisherman's hand—that the boat could support itself on the surface of the sea only by miracle.

"The officer second in command, having observed the course of the whale and the boat, manœuvred in the same direction, and when they passed near him, which they presently did, he hurled a second harpoon. The two boats then flew forward, both moored to the cachalot, and with almost the same swiftness as before.

"I then saw the captain throw his spear at the whale, but without effect; for the rapid course of the cetacean did not seem in the least diminished. In a short time all were out of sight—the whale and the two boats—all at too great a distance to be seen from the deck with the naked eye. I climbed to the mast-head, and, by the aid of a telescope, could follow up the three objects like three

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spots on the expanse of ocean; but they were at an alarming distance.

"The sun was setting, and every sign betokened a terrible night.

"Gloom soon extended over the surface of the agitated sea.....From the fall of night we had not ceased to burn blue lights as a signal of our whereabouts; and our large ship contained fortunately a supply of oil and rope, which, burning on the quarter-deck, threw forth a powerful light. But though many eyes were anxiously seeking on all sides for the two boats, we could discover nothing but the shadows. And when it was nine o'clock no one doubted but that they had disappeared for ever."

But, suddenly, a light sparkled afar off; it drew near; and before long arrived the captain and his men towing after them the vanquished whale.

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CHAPTER VI.

THE WHITE BEARS.

THIS chapter may very fitly be introduced by a prelude from a poet's lyre, in which he seeks to describe the solitary pastimes that can be enjoyed by the sad dwellers in far Northern lands:—

"A stunted, stern, uncouth, amphibious stock,
Hewn from the living marble of the rock,
Or sprung from mermaids, and in ocean's bed,
With orcs and seals, in sunless caverns bred;
They might have held, from unrecorded time,
Sole patrimony in that hideous clime;
So lithe their limbs, so fenced their frames to bear
The intensest rigours of the polar air;
Nimble, and muscular, and keen to run
The reindeer down a circuit of the sun;
To climb the slippery cliffs, explore their cells,
And storm and sack the sea-birds' citadels;
In bands, through snows, the mother-bear to trace,
Slay with their darts the cubs in her embrace,
And while she licked their bleeding wounds, to brave
Her deadliest vengeance in her inmost cave:
Trained with inimitable skill to float,
Each, balanced in his bubble of a boat,
With dexterous paddle steering through the spray,
With poised harpoon to strike his plunging prey;
As though the skiff, the seaman, oar, and dart
Were one compacted body, by one heart
With instinct, motion, pulse, empowered to ride,
A human Nautilus, upon the tide;
Or with a fleet of kayaks to assail
The desperation of the stranded whale,
When wedged 'twixt jagged rocks he writhes and rolls
In agony among the ebbing shoals,

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Lashing the waves to foam, until the flood,
From wounds, like geyser, seems a bath of blood;
Echo all night dumb-pealing to his roar,
Till morn beholds him slain along the shore."

"In bands, through snows, the mother-bear to trace."—It is of the White or Polar Bear we have now to speak, abandoning for a while the inhabitants of the seas. And yet he, too, is marine in his habits—is, in one sense, a Monster of the Deep; and as the shark is the tyrant of the Tropical, so is the polar bear (*Ursus maritimus*) of the Arctic Ocean.

DESCRIPTION OF THE POLAR BEAR—HIS HABITS—HOW HE HUNTS THE SEAL—HIS SAGACITY.

The shark is wholly and entirely *aquatic;* the polar bear is an *amphibian*, and almost as formidable in the water as on terra firma. Not, indeed, that he is very courageous; but unaccustomed to meet with any animal capable of resisting him, he is ignorant that danger exists, and ventures himself against an enemy a thousand times superior, not because he is intrepid, but because he thinks himself invincible. He is brave as the invulnerable Achilles was brave; but when once he is wounded, he flies without shame, uttering the most plaintive barks.

This bear is of the same size, or nearly so, as the brown bear. When Wilhelm Barentz pretends that he saw animals ten and thirteen feet in height, he undoubtedly indulges in the usual license of exaggeration permitted to, or rather assumed by, travellers. The bear is clothed in a thick coat of fur of a yellowish-white—shaggy, long, fine, and silken. He is thus capable of bearing without injury the most rigorous cold.

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His eyes, his claws, the tip of his muzzle, the interior of his jaw, are black.

It is now known that this animal does not lie torpid during the winter. Some authorities assert that, towards the month of December, the she-bear retires to the side of a rock, and that there, partly by hollowing out the ground with her claws, partly by allowing the falling snow to cover her, she forms a cell in which she lies immured until she has given birth to her young. The whelps born, their mother breaks open this kind of shell, and emerges with them.

It is unnecessary to point out the absurdity of this conception of a matrimonial, or rather maternal retreat. When Frederick Cuvier affirms that the polar bears lie torpid in the midst of winter, sheltered in some hole or under a layer of snow, we are aware that his statement is now disputed; but, at all events, it is probable.

During the two summer months, the polar bears frequent the forests. They eat fruits, and unearth succulent roots. They run rapidly, hunting the reindeer and other inoffensive mammals of these regions.

Then, when the snow spreads its pall over Nature's vegetable wealth, when the reindeer abandon the cold regions to migrate towards more temperate countries, the bears come to the seashore in quest of prey. They flock, more particularly, to the north of Spitzbergen, keeping to the ice-fields, and frequently assembling in numerous hordes—a remarkable exception to the law by which all the great carnivora live in isolation.

These animals swim splendidly. They have been met with at a distance of five or six miles from the nearest shore or island of ice.

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When they are found at any greater distance, the reason is that they have climbed upon the floating ice brought down by the current, and have allowed themselves to drift as upon an improvised raft. Famished and furious bands in this way arrive on the coasts of Iceland, Norway, and even in the archipelago of Japan.

HEAD OF A WHITE BEAR.

The head of the polar bear is full of character; it is brutal, ferocious, terrific. Its jaws are strong enough to cut in two a bar of iron three or four inches in diameter.

Among the ice-fields, the bears feed upon seals and fish, and even upon algæ. They attack the young cubs of the whale, when they are quite certain their mother is not with them; for in that case, with a blow from her powerful tail she crushes them like a feeble mollusc.

They follow up the seals by their scent—approach them softly, creeping along the snow—then, with one spring, they stand erect, and kill them with a bite behind the skull.

Frequently the seals select for their resting-place a point where the ice opens widely, so that, in case of attack, they may easily dive. When a bear remarks this defensive disposition, he gains the edge of the ice, plunges underneath, and rising suddenly at the very hole where the seal had hoped to shelter itself, kills and devours the surprised animal.

A story is told of a she-bear and two whelps hastening towards a fire, where a few morsels had been left of the flesh of roasted walrus. The mother drew the unburnt

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A WHITE BEAR CATCHING A SEAL.

meat from the fire, and divided it between the three, she herself taking the smallest part. The hunters, sheltered in their boat, discharged their muskets: the two cubs

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fell, but the mother was not mortally hit, and exhibited the most touching signs of despair. Without heeding the blood she was losing from her painful wounds, she occupied herself only with her young, calling them in plaintive tones, and offering them her piece of meat. In vain she attempted to raise them; in vain she called them; they

THE SHE-BEAR AND HER CUBS.

did not stir. Standing over them, she licked their wounds, and attempted to arouse them; then, understanding at last that they were dead, she advanced towards the boat, howling threateningly. Received with a general discharge of musketry, she staggered, and finding her way back to her cubs, expired by their side.

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The young bears are very small in proportion to the adults; they are not larger than rabbits, though destined to grow to a stature of six feet.

In some circumstances polar bears have given proofs of more than ordinary address. For example: a whaler wishing to secure a skin intact, endeavoured to realize his hopes by means of a stratagem. He laid along the snow a rope, with a slip knot, and in this he placed the bait. A bear came, seized the meat, and found himself caught by one paw; but he succeeded in releasing himself, and removed the provision to a place of security.

The snare was again laid; but Sirrah Bear had a good memory, and if the recollection of his prey had brought him back, that of his former embarrassment had made him more careful, and he cautiously pushed aside the rope before seizing the bait.

Nor was an attempt to conceal the snare under the snow a whit more successful. Then it was placed at the bottom of a hole of some depth, and round the opening was adjusted the noose. All the trouble was useless: the bear scratched away the snow before biting, discovered and removed the knot, and then ate the bait in peace.

THE BEAR IN CAPTIVITY AND IN FREEDOM—A COMBAT WITH WHITE BEARS.

When we see the white bear in our menageries, in the cages of the Zoological Gardens, or the Museum of Berne, it seems a stupid animal. With his comparatively small head and long neck, we pronounce him ugly. The everlasting balancing of his body is wearisomely monotonous and regular. It is not under such conditions we can judge of him fairly: captivity has the same effect upon him as

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upon all other creatures—it brutalizes him. It is when he is free and powerful, in the midst of the sea of ice, of its tempests and its furies, that he ought to be studied.

He is terrible when excited by wrath or hunger, and the explorers of the Arctic regions have frequently fallen victims to him.

In the expedition of one of the oldest voyagers—of him who discovered Spitzbergen, Wilhelm Barentz (1596) —they played an important, and too often a sanguinary part.

Barentz was lying at anchor near the Strait of Waigatz, and two of his crew, who had landed, were walking about the shore, and conversing, when one of them felt himself abruptly seized behind. He thought it a practical joke on the part of one of his comrades. "Who is there?" he said, laughing. His companion raised his head, turned pale, and took to flight: it was a bear.

When help reached the unfortunate man, it was too late; he was already torn in pieces. The bear, abandoning the remains, directed his course towards his assailants; but they, smitten with terror, fled in shameful confusion, abandoning another of their comrades who had fallen into the brute's claws. It was only after a third attempt that they succeeded in killing him, and in recovering the mangled bodies of their companions.

Another time, while wintering among the ice, to the south of Nova Zembla, Barentz saw three bears advancing in the rear of his ship, at a moment when everybody was engaged in disembarking the stores. In vain did he and some seamen shout their loudest; the bears seemed in nowise affrighted, and the voyagers were compelled to defend themselves. They found a couple of halberds: these were

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the only weapons which had not been carried ashore; Barentz took one, and Girard de Veer the other.

All ran to the ship. Gliding over the ice, a seaman sank into a crevasse; and every one trembled for his fate, never doubting that he would be the first devoured. Fortunately the bears did not observe the mishap, and the sailor was able to recover himself and rejoin Barentz and De Veer, who had climbed up the vessel's stern. Then they were free to breathe: everybody was on board.

But the bears did not so readily abandon their hopes of prey. They endeavoured to clamber upon deck. The men prevented them at first by throwing to them fragments of wood and various utensils, on which they precipitated themselves each time, as young dogs do; but, after awhile, these projectiles failed. Barentz, reduced to extremity, and listening to his despair rather than his prudence, hurled his halberd against the larger bear. Fortune favoured him, and guided the weapon; it severely wounded the animal in the muzzle, and uttering a loud cry, he rapidly took to flight. The others followed him, although more slowly.

Finally, to conclude this chronicle of disaster, we may state that on the 30th of April 1597, three sailors who had eaten some bear's liver were seized with a sudden illness, and lay at the point of death for several hours.

VITALITY OF BEARS—CAPTAIN LEWIS—CAPTAIN COOK—BEAR HUNTS.

It is difficult to form an idea of the extraordinary vitality of these animals. You may hit them with several balls; you may thrust them through and through with a lance, it matters not; they still continue their resistance; nor

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SAILORS ATTACKED BY WHITE BEARS.
(Reduced from an engraving by Goupil, after Lepoitevin.)

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do they wholly succumb until they are struck in the heart or head.

Frederick Martens writes:—"We dealt them blow after blow on the head with a heavy club; they were not at all stunned, though the blows would have felled an ox."

Captain Lewis, accompanied by five men, made an attack on a polar bear. At a distance of forty paces four sailors fired and wounded him. The furious beast unhesitatingly rushed upon his enemies with open jaws and prolonged howlings. The captain and a sailor, who had not yet fired, took aim, and hit him in the shoulder. Yet, before they had time to reload, the bear was close upon them, and they fled towards their ship. Though crippled, their formidable enemy continued to pursue them.

The parts being reversed, the hunters were closely followed up by their wounded prey, and undoubtedly said to themselves:—

"Qu'il ne faut jamais
Vendre la peau de l'ours qu'on ne l'ait mis par terre."
[One must never
Sell the skin of the bear one could not kill.]

Two sailors flung themselves into the ship's boat; the others concealed themselves behind some blocks of ice, and fired as soon as they could. But each fresh wound did but increase the animal's rage. At length he approached so close that, losing all presence of mind, the men leaped into the sea from a height of about six feet. The bear followed them again into this element, and had overtaken one of them, when his limbs began to grow rigid, he ceased to swim, and died.

When the sailors cut up the body of the enemy from whom they had with so much difficulty escaped, they found he had received *eight balls*.

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If the bear is shot in the head, he dies instantaneously; but only a good marksman can hit the exact point where the ball must penetrate.

In 1788, Captain Cook, while off the coast of Spitzbergen, landed in company with the surgeon. Suddenly the celebrated navigator was assailed by a bear, who seized him between his paws. Cook did not lose his presence of mind. He cried to the surgeon to fire. The latter obeyed, and happily lodged a ball right in the brain of the carnivore, who immediately loosened his hold of the captain, and fell lifeless. It was time!

To a great extent the polar bear lives upon plunder. He seeks the summit of the ice-hillocks, and watches until the scent on the wind awakens his appetite, and guides him at the same time to the shore where the whalers have abandoned the refuse of their spoil. If no seals or carrion come within his reach, he lives, it is said, on fish, seizing them adroitly with his paws, and, as cats do, when they spring out of the water. That this is true, we think a general concurrence of respectable authorities indicates; but, at all events, it is an undoubted fact that marine plants have been found in the stomach of these animals.

"In Iceland," says Olaüs Magnus, "there are great white bears of exceeding power, which break the ice with their claws, and through the holes thus made leap into the sea and catch the fish, which they bring to the brink of the water, and live upon them; and to these holes they frequently return when they are hungry, or want to feed their cubs,—dragging the latter along the ice, and teaching them how to fish for themselves at a future day.

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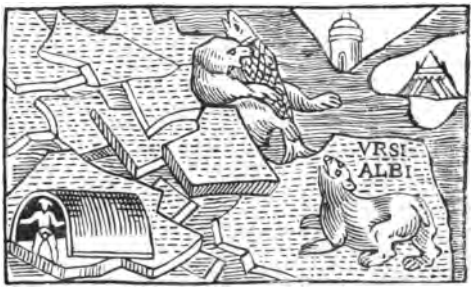
"The hunters," he adds, "give the skins of these white bears to the cathedral or parochial churches, to place at



BEARS CATCHING FISH (*facsimile of an engraving by Olaüs Magnus*)

the foot of the high altar, for fear the priest's feet should grow cold while he sings the grand mass."*

To conclude this "chapter of accidents" in an entertaining manner, we shall reproduce another of the engravings of Olaüs Magnus, with the grotesque explanation which, in the original, accompanies it.

"You see in our illustration," he says, "how the bears living on board a ship climb and descend by its ropes and shrouds, performing a thousand pastimes, which pastimes are not always useless. For we learn from the histories that a corsair was saved from being surprised by his deadly enemy through these beasts. For the other corsair coming unexpectedly to surprise the ship of his foe, and seeing from afar these bears descending and ascending even to the topmast, thought they were seamen sent there for the defence of the vessel, as is the custom in such affairs, though they were only young bears at play among the

* Olaüs Magnus, "Historia," &c. (ed. 1555, p. 202.)

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rigging. Wherefore, completely panic-stricken, and thinking that his enterprise was discovered, he returned without

A BEAR CLIMBING A SHIP (*facsimile of an engraving by Olaüs Magnus*).

accomplishing it. It is, however, a fine spectacle when they peer into the sea, and a great herd of sea-calves hasten to see them, as if astonished."*

USES OF THE POLAR BEAR—HOW THE ESKIMOS HUNT HIM—IMPOSSIBILITY OF TAMING HIM—THE ADVENTURE OF A CURIOUS BEAR AND A BRAGGART SAILOR.

Man contrives to turn to some advantage this formidable enemy. His liver, it is true, seems unwholesome; and old prejudices, strongly rooted in the minds of seamen, prevent them from eating his flesh, lest their hair should turn white. "Perhaps," says an old writer, "the opinion is not well founded;" but, meanwhile, our sailors refuse to eat it (the flesh, not the opinion). Only the fat is utilized.

Fat and flesh are boiled down together in a huge caldron; the fat readily separates of itself, and is easily collected. It is afterwards re-melted, and sprinkled with salt and water, to purify it.

* Olaüs Magnus, "Historia," &c. (ed. 1555, p. 207).

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This produces a loud report, and considerable volleys of smoke, but the fat loses its ill odour. It is then allowed to rest, and at the end of a few days a limpid oil floats upon the surface, which can be employed for the same purposes as olive oil: the lard underneath is not unlike the fat of pork.

The Eskimos of Greenland and America are active in their pursuit of the bear, so as to keep up a supply of this fat and this oil. The former is employed medicinally; the latter is much more useful for purposes of illumination, and serves as a seasoning for food in cold countries. It is said the hunters capture them in their winter lairs, when they are benumbed with the cold, and knock them on the head while incapable of self-defence.

Polar bears cannot be tamed. They never recognize their keeper, and, especially, they do not grow familiar with him, like other carnivores. However, in captivity they preserve their health, eat anything their keeper gives them, and, at need, are content with bread, though they prefer meat; they bathe frequently, and particularly so in summer, and do not cease to waddle, crouching nearly always on their paws.

In the Zoological Gardens at London, the cage of the polar bear is very skilfully and comfortably disposed, with a large basin and a jet of water in the centre. In the great heats of summer the attendants pour basketfuls of ice into this reservoir; and for food, supply the bear with fish-cakes. Through such careful arrangements the animal lives, as it were, in a fictitious medium closely resembling the conditions of his natural habitat, and thus is always on the alert, lively, brisk, and robust.

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In 1812, a mother bear was killed by some of Scoresby's sailors, who at the same time captured her two cubs alive. The latter, after awhile, grew friendly with the crew, and were sometimes allowed to wander freely about the deck.

A few days afterwards, the vessel lying at anchor near an ice-floe, the men fastened a rope to the neck of one of the whelps, and holding him thus in leash, flung him overboard. The animal gained the ice, climbed upon it, and endeavoured to release himself by working at the rope with his paws. Not succeeding in this, he sprang to the edge, and ran as quickly as possible, with his back to the vessel, so as to give the rope a smart shock; but it would not yield. Several times he repeated the same manœuvre, growling at each successive failure; at last, in complete despair, he flung himself down on the ice, silent and conquered.

In spite of his ferocious humour, the polar bear is a singularly inquisitive animal. He will stop at any time to examine the most insignificant trifle. He bites at everything he finds, even if it breaks his teeth. When he comes upon a *cache*, or concealed depôt of provisions, he smashes everything. He pillages the store of lard, seizes upon the flour, and will carry off even a tin pot, a paletot, or a pair of boots.

A whaling ship was moored to an iceberg on the coast of Greenland. At no great distance from it the crew descried an enormous bear, on the watch for seals. One of the sailors, slightly stimulated by a good dose of rum, resolved to encounter him, in opposition to the advice of his companions. Armed only with a harpoon, and after a

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fatiguing journey in the snow, he arrived, at about the end of half an hour, in face of his enemy. By this time his excitement had subsided, and his blood having cooled, he began to reflect upon the madness of his freak. The bear was of great size, and awaited him with the utmost composure. What should he do? Abandon his rash design? To do so would be to make him the jest of his

BEARS PILLAGING A STORE.

friends, who would treat him as a poltroon. Yet to attack the bear was a rash enterprise, and the issue of the struggle was, to say the least of it, doubtful.

However, vanity had a louder voice than fear, and he was preparing to begin the combat, when the bear, much less disturbed than his adversary, anticipated him, and moved in advance. Shame could no longer induce our

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mariner to hold his ground,—before everything, life!—and he took to his heels with all possible swiftness. The bear pursued, and being more accustomed to the slippery frozen soil, gained rapidly upon the imprudent mariner. What is the use, he thought to himself, of a heavy harpoon, if one wants to flee with the utmost celerity? Away went the weapon. The bear perceived it, halted, smelled it, turned it over and over, bit at it, gnawed it, and thus wasted several minutes; then he resumed his chase, and soon recovered the lost advantage. The sailor sought every means to distract and retard his enemy: successively he threw to him one mitten, then another, then his hat, and each time the bear stopped to toss the article about, and thoroughly examine it; but each new deception increased his wrath, and the crew, seeing that the farce was likely to end in a tragedy, interfered. The bear, seriously wounded by a volley of musketry, hastened to beat an honourable retreat.

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CHAPTER VII.

VARIOUS KINDS OF SIRENS—HISTORY OF THE MYTH.

"And now they nigh approachèd to the stead
Whereat those mermaids dwelt. It was a still
And calmy bay, on th' one side shelterèd
With the broad shadow of a hoary hill;
On th' other side an high rocke tourèd still,
That 'twixt them both a pleasaunt port they made,
And did like an halfe theatre fulfill.
There those five sisters had continuall trade,
And used to bathe themselves in that deceitful shade.

"They were fair ladies, till they fondly
With th' Heliconian maides for maystery;
Of whom they overcomen were deprived
Of their proud beauty, and the one moiety
Transformed to fish for their bold surquedry;
But th' upper half their hue retainèd still,
And their sweet skill in wonted melody;
Which ever after they abused to ill,
To allure weeke travellers, whom gotten they did kill.

"So now to Guyon as he passèd by,
Their pleasaunt tunes they sweetly thus applied:
'O thou faire sonne of gentle Faëry,
That art in mightie armes most magnified
Above all knightes that ever battle tried,
O turn thy rudder hitherward awhile;
Here may thy storm-beat vessel safely ride;
This is the port of rest from troublous toil,
The world's sweet inn, from pain and wearisome turmoil.'"

SPENSER, bk. ii., c. 12.

WE opine that of all the myths invented by the poets of antiquity, the most famous, and not the least beautiful, is that of the Sirens.

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At first, as we shall see, it was not very distinctly defined among the early Greek writers; but the mythological conception gradually developed itself, assumed a life and body of its own, and owing to the comparisons drawn and the errors made by Greek and Roman seamen, knowing little of the true *cultus* of their countries, it passed from the heavens to the seas, and from the shadowy domains of allegory entered the scarcely less shadowy regions of natural history.

Yet, at the beginning of the Christian era, the naturalists —Pliny amongst others—refused to place any credence in Sirens or Tritons, and eagerly sought for the marine animals in which they believed them to have originated.

But the Middle Ages were too fondly in love with fable to neglect a legend that appealed so vividly to the imagination. They seized upon it eagerly; they put aside every fact that was likely to clear up the mystery; and every Western nation created for itself a water-spirit. In France, it was the Siren; in Scotland, the White Lady; in England, the Mermaid; in Germany, the Nix or Ondine; in the Netherlands, the Merminne or Neck.

Even up to the present time the Dutch fishermen have preserved the superstition. In other countries it has become the favourite theme of romancists and poets—as of De la Motte Fouqué, in his "Ondine," and Sir Walter Scott, in his "Monastery."

Of the way in which the legend has been treated by the poets, it will be pleasant to give an example or two.

Without quoting what is called the song of the sirens in Homer,—for it is scarcely equal to the high standard of the great Greek poet,—we come down to later times, and to English writers, and show what kind of a siren's strain

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was sung by William Browne, the author of "Britannia's Pastorals":—

"Steer, hither steer your wingèd pines,
All beaten mariners;
Here lie Love's undiscovered mines,
A prey to passengers;
Perfumes far sweeter than the best
Which makes the Phœnix' urn and nest.
Fear not your ships,
Nor any to oppose you, save our lips;
But come on shore,
Where no joy dies till love hath gotten more.

"For swelling waves our panting breasts,
Where never storms arise,
Exchange, and be awhile our guests;
For stars gaze on our eyes.
The compass Love shall hourly sing;
And as he goes about the ring,
We will not miss
To tell each point he nameth with a kiss.
Then come on shore,
Where no joy dies till Love hath gotten more.'

Thus Tennyson sings:—

"Who would be
A mermaid fair,
Singing alone,
Combing her hair
Under the sea
In a golden curl,
With a comb of pearl,
On a throne?

"I would be a mermaid fair;
I would sing to myself the whole of the day;
With a comb of pearl I would comb my hair;
And still as I combed I would sing and say,
'Who is it loves me? who loves *not* me?'
* * * *
But at night I would wander away, away,
I would fling on each side my low-flowing locks,
And lightly vault from the throne, and play
With the mermen in and out of the rocks:
We would run to and fro, and hide and seek,
On the broad sea-wolds, in the crimson shells,
Whose silvery spikes are nighest the sea.
But if any came near, I would call, and shriek,
And adown the steep like a wave I would leap,
From the diamond ledges that jut from the dells;
For I would not be kist by all who would list,

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Of the bold merry men under the sea;
They would sue me, and woo me, and flatter me,
In the purple twilights under the sea;
But the king of them all would carry me,
Woo me, and win me, and marry me,
In the branching jaspers under the sea;
Then all the dry pied things that be
In the hueless mosses under the sea
Would curl round my silver feet silently,
All looking up for the love of me.
And if I should carol aloud, from aloft
All things that are forked, and horned, and soft,
Would lean out from the hollow sphere of the sea,
All looking down for the love of me."

Beings which have received so much distinguished attention may well occupy a few of our gossiping pages; and we trust the reader will find amusement in the following combination of the mythic and the true, of fable and fact.

We begin with a quotation from Mr. Keightley, in illustration of the earlier forms of the myth.

"Leaving Æaca on their homeward voyage," says Keightley, "Odusseus and his companions came first to the islands of the sirens. These were maidens, who sat in a mead close to the sea, and with their melodious voices so charmed those who were sailing by that they forgot home, and everything relating to it, and abode there till their bones lay whitening on the strand. By the directions of Circe, Odusseus stopped the ears of his companions with wax, and had himself tied to the mast; and thus he was the only person who heard the song of the sirens, and escaped.

"Hesiod described the mead of the sirens as blooming with flowers, and says that their voice stilled the winds. Their names were said to be Aglaiopheme ('Clear-voice'), and Thelxiepeia ('Magic-speech'). It was feigned that they threw themselves into the sea with vexation at the escape of Odusseus; but the author of the 'Orphic Argo-

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nautics' places them on a rock near the shore of Ætna, and makes the song of Orpheus end their enchantment, and cause them to fling themselves into the sea.

"It was afterwards fabled (see Apollodorus) that they were the daughters of the river-god Acheloüs, by one of the Muses. Some said that they sprang from the blood which ran from him when his horn was torn off by Hercules. Sophocles calls them the daughters of Phorcys.

"Contrary to the usual process, the mischievous part of the character of the sirens was, in process of time, left out, and they were regarded as purely musical beings, with entrancing voices. Hence Plato, in his 'Republic,' places one of them on each side of the eight celestial spheres, where their voices form what is called the music of the spheres; and when the Lacedæmonians invaded Attica, Dionysius, it is said, appeared in a dream to their general, ordering him to pay all funeral honours to the new siren, which was at once understood to be Sophocles, then just dead.

"Eventually, however, the artists laid hold on the sirens, and furnished them with the feathers, feet, wings, and tails of birds."

It will be observed that Keightley places the number of the sirens at two, but most authorities are of opinion that they were three. "Fulgentius and Servius affirm," says Boccaccio, "that the sirens were three; one of them singing with the voice alone, another to the lyre, and a third playing on the flute. Leontius, however," he continues, "says there were four, and that the fourth sang to the timbrel." In another place he brings them up to five; which is the number assigned by Spenser.

"The sirens, then," to use Leigh Hunt's language, "are more particularly taken for three sisters, monstrous in

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figure, but charming in face and voice, who used to stand upon a place near the coast of Naples, and with alluring songs enticed wayfarers to their destruction. Some say the victims perished for want of food, pining and dying away, unable to do anything but listen; others, that the three sisters devoured them; others, that they tumbled

THE SIRENS OF MYTHOLOGY.

them out of their ships. The whole place was strewn with bones, and shone afar off with the whiteness, like cliffs; and yet neither this, nor their monstrous figure, visible on nearer approach, hindered the infatuated men from doting on their faces and sweet sounds; till, getting closer, they glided headlong into the snare.

"The shape of the sirens has been variously represented. Some say (and this, we believe, is held to be the most orthodox description) that they were entire birds, with the exception of a beautiful human face. Others, that they were half birds and half women, the female being the upper part. Others, that they were half women and half

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fish—that is, mermaids; and this figure has again been varied by wings, and the feet of a hen. If they were only human-faced birds, they must have confined their attractions to singing, for hands are required to play the musical instruments which are sometimes given them. But there were three of them, which is more than enough for harmony; and if, in addition to their harmony, they had beautiful faces, it is no matter how monstrously they terminated—the more monstrous the charmer, the more ghastly and complete the fiction.

"These appalling seducers, according to some, were originally sea-nymphs of the proper shape, till Ceres punished them for not assisting her daughter when carried away by Pluto; though Ovid says that they took that adventure so much to heart as to beg the gods to bestow wings on them, that they might search for her by sea as well as by land. It is added by others, that Juno (jealous, we suppose, after the usual fashion of that very uncomfortable and sublime busybody) encouraged them to challenge the Muses to a trial of song; upon which, being conquered, their kinswomen plucked them, and made crowns of their feathers. This is said to have taken place in Crete. If so, they must have migrated; for they are generally supposed to have inhabited certain islands on the coast of Naples, thence called Sirenusæ, where an oracle informed them that, unless they could entice and destroy every one who passed within hearing, they should perish themselves. When their fatal hour came, they are reported by some to have been changed into rocks, a fit ending for the hardness of sensuality."

The names of the three sirens are intended to describe

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their peculiar charms: Leucosia, Ligeia, Parthenope—that is, the fair, the musical, the maiden-faced. Two of these are mentioned by Milton in his "Comus":—

> "By Thetis' tinsel-slippered feet,
> And the songs of sirens sweet;
> By dead Parthenope's dear tomb,
> And fair Ligeia's golden comb,
> Wherewith she sits on diamond rocks
> Sleeking her soft, alluring locks."

The reader will permit us, perhaps, yet another quotation from Leigh Hunt's lively pages: —

"*Allegorically*," he says, "the sirens are sensual pleasures, who, though deriving their charms from one of the Muses, are conquered by a combination of all. *Topographically* (for they have been accounted for also in that manner), they are said to have alluded to 'a certaine bay, contracted within winding straights and broken cliffes; which, by the singing of the windes, and beating of the billowes, report (says Archimachus, as quoted by Sandys) a delightful harmony, alluring those who saile by to approach; when forthwith they are throwne against the rocks by the waves, and swallowed in the violent eddyes.' *Humanly*, they are thought to have been a set of enticing women, living on the coast of Naples (where divers of the like sort, as Sandys would have said, may to this day be found), and alluring strangers to stop among them, by the pleasures and accomplishments with which they were surrounded. But we are told of them, also, *zoologically*; for some have taken them for certain Indian birds, who set mariners to sleep with their singing, and then devour them; while 'some, as Gaza and Trapezuntius (quoth our old friend), affirm that they have seene such creatures in the sea; either the divells assuming such shape, to counte-

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nance the fable, or framed in the fantasie by remote resemblances, as we give imaginary formes unto clouds, and call these monsters of the deepe by the names of land creatures, which imperfectly carry their similitude.'"

THE GREEKS AND THE ROMANS—THE OCEANIDES—THE NYMPHS—THE SIRENS—THE TRITONS.

In the ancient mythology Ocean was personified. He was the son of Cœlum and Terra. He was the first of the Titans, and the only one who took no part in the revolt of Saturn.

Like all the Greek divinities, Saturn has an Aryan origin; is the Indra of the Hindus. But as the Aryans, dwelling on the lofty Asiatic plateaux, were unacquainted with the sea, they could not transmit any idea of its multitudinous waves to the Greeks, and it was the Phœnicians, undoubtedly, who introduced the new *cultus*.

An ancient Greek writer shows us the Sea as it appeared to the ancients; and the passage is worth quoting, in illustration of the difference to the mind of antiquity between the inner seas and the outer ocean.

"Nine-tenths of the waters of Ocean," says Hesiod, "flowing underground through the night, fall in whirlwinds of silver into the bosom of the waves, around the earth, and on the huge back of the inner seas. One-tenth alone, to the great injury of the gods, escaping from an elevated rock, forms the water of the Styx, on which the Immortals take their solemn oath."

Oceanus wedded his sister, Tethys, whom we must beware of confounding with her grand-daughter Thetis, the mother of Achilles; their children were innumerable,

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and among them we may enumerate Nereus, Acheloüs, Doris, and the Oceanides, who, to the number of three thousand, peopled the depths of the sea.

From the union of Nereus with his sister Doris, the fair-haired, sprang the Nereids. Of these there were fifty, each of whom had her special mission. Cymodare, assisted by the beautiful Amphitrite, subdued the tumultuous waves. Several became mothers of heroes. Thus Æacus is son of Psammothea, Achilles of Thetis, Anchises and Æneas of Aphrodite, Geryon of Kallirrhoë, and, finally, the Tritons were children of Amphitrite and Neptune.

The Nereids, or nymphs of the Mediterranean and Black Sea, were ordinarily represented under the form of beautiful young girls, nude, or semi-nude—

"Half-naked, natural, loving, and antique."

One of the Pompeian frescoes represents a nereid holding a cup, from which a marine monster slakes his thirst.

At a later date, the poets spread abroad the idea that their fair bodies terminated, not in the shapely limbs of a woman, but in a fish's tail. To this, it is not improbable, Horace may allude in his well-known lines:—

"Ut turpiter atrum
Desinat in piscem mulier formosa superne."

The Latin authors pretended they had glaucous, or sea-green locks.

In our mythological wanderings we are carried back to an earlier antiquity. It was about 1265 B.C. that the most renowned heroes of Greece—Theseus, Hercules, Jason, Castor, Pollux, Æsculapius, Lynceus, Orpheus, and others—embarked in Thessaly. All our readers will have pre-

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sent to their recollection the exquisite fable of the Expedition of the Argonauts, or the Search for the Golden Fleece, if it were only from the restorative influence of William Morris;* and we refer to it simply to remind them that the hardy navigators sailed past the islands inhabited by the sirens. Naturally the fair-haired and sweet-voiced maidens endeavoured to beguile and attract, that they might eventually destroy them. But Orpheus raising aloud his melodious voice, they remained hushed in silence, so as not to lose a syllable of his wondrous song. And thus the good ship *Argo* passed by in safety.

The sirens of antiquity, however, did not resemble the fascinating sea-maidens described by modern poets and painted by modern artists. It was not until at a comparatively recent date that, owing to the ignorance of sculptors, painters, and story-tellers, the characters of the nereids and of these monsters were confused together; that to the body, half woman, half fish, and to the green tresses of the nereids, were allied the musical talents and cruel, perfidious instincts of the sirens, and the creatures thus invented baptized with the latter name.

Pliny, however, will not admit either of these fables. "I do not believe in the sirens," he says, in the book of his "Natural History" devoted to Birds, "though Dinon, father of Clearchus, a celebrated author, affirms that they exist in India; that they seduce men by their singing, with the view of rending them in pieces when lulled to sleep."

Elsewhere, he declares that the water-sirens are genuine fishes, with a very vague resemblance to the human features, and that several had been caught on the coasts of Gaul.

The Tritons, sons of Neptune and the Nereid-queen

* In his poem of the "Life and Death of Jason."

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Amphitrite, underwent the same transformations as the Nereids. At first looked upon as marine men,—really and truly *mermen*,—they were afterwards described as fish-tailed monsters, with long and sea-coloured hair and beard. Or, to quote Leigh Hunt's more graphic description, as "half a man and half a fish, with a great muscular body, and a tail ending in a crescent. There is a variety which has the fore-feet of a horse. And sometimes he has two thighs like a man, or great, round, divided limbs resembling thighs, and tending to the orbicular, which end in fish-tails instead of legs. He serves Neptune and the sea-nymphs; is employed in calming billows and helping ships out of danger; and blows a conch-shell before the car he waits on, the sound of which is heard on the remotest shores, and causes the waves there to ripple. You may see him in all his jollity in the pictures of the Italians, waiting upon Galatea, and sporting about the chariot with the nymphs; for with the strength he has the good humour of the most gambolling of the great fish, and when not employed in his duties, is for ever making love, and tumbling about the weltering waters."

TRITON WITH HIS CONCH.

What should we moderns do without these treasures of the ancient Fable World? How they impress themselves upon our imaginations from childhood; how they enter into our thoughts, and mingle with our fancies, until we almost come to believe in them,—almost come to believe in their youthfulness and immortal beauty! The Naiad still muses on the margin of the lake; the Nymph still wanders through the leafy grove; Neptune still drives his impetuous chariot along the waves. We cannot separate ourselves from

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the old mythology; we cannot put it aside, nor its sweet pictures, and bright suggestions, and tender sympathies.

NEPTUNE.

But for the old fables, we should have lost the beautiful spectacle presented to us in Spenser's verse:—

"First came great Neptune with his three-forked mace,
That rules the seas, and makes them rise or fall;
His dewy lockes did drop with brine apace,
Under his diadem imperial;
And by his side his queene with coronal,
Fair Amphitrite, most divinely fair,
Whose ivory shoulders weren covered all
As with a robe with her own silver hair,
And deckt with pearles which th' Indian seas for her prepare."

We should have lost, too, that grand image of Wordsworth's,—of the poet lamenting over our utter worldliness, and then bemoaning himself and his fate, with sad reference to a more poetic age:—

"O God, I'd rather be
A Pagan, suckled on a creed outworn,
So might I, standing on this pleasant lea,
Have glimpses that would make me less forlorn;
Have sight of Proteus coming from the sea,
Or hear old Triton blow his wreathèd horn!"

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And we should have lost that bright piece of fancy, the "Merman," which we are glad to quote as Tennyson's companion-picture to his "Mermaid:"—

"Who would be
A merman bold,
Sitting alone,
Singing alone,
Under the sea,
With a crown of gold,
On a throne?

"I would be a merman bold;
I would sit and sing the whole of the day;
I would fill the sea-halls with a voice of power;
But at night I would roam abroad and play
With the mermaids in and out of the rocks;
Dressing their hair with the white sea-flower;
And holding them back by their shining locks,
I would kiss them often under the sea,
And kiss them again till they kissed me,
Laughingly, laughingly;
And then we would wander, away, away,
To the pale-green sea-groves straight and high,
Chasing each other merrily.

"There would be neither moon nor star:
But the wave would make music above us afar—
Low thunder and light in the magic night—
Neither moon nor star.
We would call aloud in the dreamy dells,
Call to each other and whoop and cry
All night, merrily, merrily;
They would pelt me with starry spangles and shells,
Laughing and clapping their hands between,
All night, merrily, merrily."

An antithesis to this light and laughing picture is presented by Mr. Matthew Arnold, in his exquisite lyric of the "Forsaken Merman," one who has been united in human love with a beautiful woman, and who now with his children has been left mourning over her departure. Mr. Arnold has very finely availed himself of the old superstition that alliances were not uncommon among mortal women and the spirits of the sea. He says:—

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"Come, dear children, let us away;
Down and away below!....
Call *her* once before you go—
Call once yet!
In a voice that she will know:
'Margaret! Margaret!'
Children's voices wild with pain,—
Surely she will come again!
Call her once and come away;
This way, this way!"

The merman continues:—

"Children dear, was it yesterday
We heard the sweet bells over the bay?
In the caverns where we lay,
Through the surf and through the swell
The far-off sound of a silver bell?
Sand-strewn caverns, cool and deep,
Where the winds are all asleep;
Where the spent lights quiver and gleam;
Where the salt-weed sways in the stream;
Where the sea-beasts ranged all round
Feed in the ooze of their pasture-ground;
Where the sea-snakes coil and twine,
Dry their mail, and bask in the brine?
Where great whales come sailing by,
Sail and sail, with unshut eye,
Round the world for ever and aye?
When did music come this way?
Children dear, was it yesterday?"

We must venture upon one more quotation, in which the merman describes his last pitiful sight of his false mortal love:—

"Children dear, were we long alone?
'The sea grows stormy, the little ones moan.
Long prayers,' I said, 'in the world they say.
Come!' I said; and we rose through the surf in the bay.
We went up the beach, by the sandy down
Where the sea-stocks bloom, to the white-walled town;
Through the narrow-paved streets, where all was still,
To the little gray church on the windy hill.
From the church came a murmur of folks at their prayers,
For we stood without in the cold-blowing airs.
We climbed on the graves, on the stones worn with rains,
And we gazed up the aisle through the small-leaded panes.
She sate by the pillar; we saw her clear;
'Margaret, hist! come quick, we are here.
Dear heart,' I said, 'we are long alone;
The sea grows stormy, the little ones moan.'

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> But, oh, she gave me never a look,
> For her eyes were sealed by the Holy Book!
> Loud prays the priest; shut stands the door.
> Come away, children, call no more!
> Come away, come down, call no more!"*

After this living realization of the old poetic myth, one has scarcely patience to see it converted into the vulgarest brick and mortar by that pseudo-mythologist and most literal antiquary, Jacob Bryant.

"The Hetrurians erected on their shores towers and beacons for the sake of their navigation, which they called Tor-ain; whence they had a still farther denomination of Tor-aini (Tyrrheni). Another name for buildings of this nature was Tirit or Turit; which signified a tower or turret. The name of Triton is a contraction of Tirit-on, and signifies the tower of the sun; but a deity was named from it, who was supposed to have had the appearance of a man upwards, but downwards to have been like a fish. The Hetrurians are thought to have been the inventors of trumpets; and in their towers on the sea-coast there were people appointed to be continually on the watch, both by day and night, and to give a proper signal if anything happened extraordinary. This was done by a blast from the trumpet. In early times, however, these brazen instruments were but little known; and people were obliged to use what were near at hand, the conches of the sea: by sounding these they gave signals from the tops of the towers when any ship appeared; and this is the implement with which Triton is more commonly furnished. Amphitirit is merely an oracular tower, which, by the poets, has been changed into Amphitrite, and made the wife of Neptune."

* Matthew Arnold, "Poems" (1869), i. 184, 185, 187.

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Was ever more lame and impotent conclusion?

We gladly return to the more fanciful atmosphere of antiquity. Pausanius tells us quaintly that, for some unknown reason, the Tritons had conceived a great animosity against the inhabitants of Tanagria. And the latter were animated with at least an equal hatred, and battles were frequent, in which the human combatants frequently prevailed over the oceanic.

A certain triton was wont to quit his sea-cavern every night, bent upon carrying off the cattle of the Tanagrians; nor were the latter able to capture or kill him. At last, one evening, the brilliant idea occurred to them of placing an immense vessel of wine—of capacity sufficient for Pantagruel—on the summit of a very steep hill. When nightfall came, the triton came also, and, as was his wont, began to prowl about, until he alighted on the vessel. "What is this?" said he; and quickly divining, he drank, and he drank, and as he drank he grew confused and lethargic, falling, finally, into a deep drunken slumber. Then, in his sleep, he rolled, unwittingly, from the top to the bottom of the hill; the Tanagrians hastened to the spot, and avenged themselves by striking off his head.

Pausanias was more credulous than Pliny, when describing the tritons; he asserted that their head-gear was composed of sea-weed, the body covered with small, hard shells, the gills behind the ear, the nose like that of a human being, a mouth wide open and deep yawning, teeth like ours, eyes green, hands straight,—like bivalve shells,—and legs terminating in a dolphin's tail!

But before we can credit the existence of such a hetero-

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geneous monster, we shall require as good evidence as Autolycus offered in a similar case:—

"Five justices' hands at it, and witnesses more than my pack will hold!"*

THE ANALAGOUS MYTHS OF THE EAST.

The East is properly the birthplace and nursery of myth, legend, and fable; but in sea-stories it is deficient, owing, we believe, to the comparatively slight acquaintance of most Oriental nations with the "sights and sounds of Ocean."

Nevertheless, the tradition of the sirens flourished there, though with less vitality than among the wave-loving people of the West.

For example: we learn from Alkazuin the belief of the Arabs in the existence of a race of men permanently mounted upon ostriches, with which they seem to form but one body; who inhabit various islands, and devour the drowned whom the waves bring to their shores.

Other monsters, called in Arabic *Abou-Muzaina*,—that is, "Fathers of the Beautiful,"—frequent the environs of Rosetta and Alexandria. These animals inhabit the sea, but sometimes emerge from the "sounding waves" to visit the green earth,—a frolicsome company. They are like to men, shaggy and well-made.

One day a hundred of them were captured, but so pitiful were the moans they uttered, their captors set them free.

Another animal in the same country is called the "Old Man of the Sea;" he is met with near Damas. The Syrians hail his appearance as the presage of a good

* Shakespeare, *A Winter's Tale*, act iv., scene 3.

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harvest. He speaks a language which they do not understand—embodying, it may be, the "multitudinous laughter" of the waves—and wears a tail.

One was caught as he strode out of the water; a wife was found for him, and the twain had a son, who spoke the paternal or maternal language indifferently.

The "Old Jew" has a white beard, and a hairy skin like a bull's; his size is that of a calf. On the eve of Saturday, he shows himself on the surface of the Mediterranean, and remains there, leaping, plunging, and gambolling, until Saturday evening.

An Arab author, whose name will not sound very smoothly in European ears, *Ibnola Bialsaths*, affirms that, in his time, the seamen in the bright straits of Greece frequently caught in their nets "water-maidens, of a dark complexion, and with black eyes," who spoke an unintelligible language, and uttered joyous bursts of laughter. After having caressed them, the sailors threw them back into the sea.

This reminds us of an amusing anecdote related by a Belgian, M. F. Beasens, who made some voyages in a Belgian ship, and heard the anecdote from the mate.

"It took place," he says, "at Alexandria, on the river Nile. Owing to the wreck of a Belgian brig, the *Virgin Mary*, my mate served (it is some twenty years ago) on board a Greek vessel.

"One day,—you would hardly believe it,—the Greek sailors were in an excellent humour, for they had captured, and brought on board, a siren!

"The siren was an animal, the upper half of whose body resembled that of a female, or nearly so, with arms like our own, if you can suppose that ours were cut off above

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the elbow; the lower section of the body was shaped like a fish's tail, but when she was alone, or thought herself alone, upon deck, the creature spread out her tail into an infinity of little paws, by whose help she moved about erect.

"I should greatly have liked to keep this curiosity; but on the following day, the Greeks being still in a good, or even better humour, for they were uncommonly tipsy, took a couple of spades, and began to beat the siren as if they were flattening plaster.

"The poor beast moaned and cried like a young child.

"After they had thoroughly beaten and pounded, they cooked and ate the unfortunate siren."

THE MEDIÆVAL SIRENS.

In the Middle Age, our authors took an evident pleasure in quoting every example of a meeting with a siren, or, to use the word then popular, a Seraine.

Let us remark, in passing, that from this word comes the French *serin*, or "canary," given to it on account of its song.

In the Peloponnesus, Theodore de Gaza affirms that he saw numerous sirens wrecked (so to speak) on the sea-shore. One of them he replaced in the water, and immediately she took to flight.

George of Trebizond saw far out at sea a woman emerging from the water up to her waist, and playfully diving at intervals.

Julius Scaliger heard two of his father's Epirot servants declare that each of them had had the good or rare fortune to make acquaintance with a triton; and the same was said by another man, Constantinus Palœocapus.

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A native of Valencia, Valerio Tesiro, informed the said learned Scaliger that a triton which had been caught in Spain, was thrown back into his native element at the prayer of an ambassador.

Gyllius maintains that in Dalmatia "marine men" are caught, with a skin so hard that the soles of the thickest shoes are made out of it.

Shakespeare records the exhibition of a "strange fish" that, we know from other quarters, was the wonderment of the Londoners in his time. He represents Autolycus as saying:—"Here's another ballad of a fish that appeared upon Wednesday, the *fourscore* of April, forty thousand fathom *above* water, and sung this ballad against the hard hearts of maids. It was thought she was a woman, and was turned into a cold fish, for she would not exchange flesh with one that loved her."

The great receptacle of the old stories about these monsters is, undoubtedly, the "Historia Animalium" of Conrad Gesner. He devotes two whole chapters to *Wassermen*—that is, tritons and sea-men—and it is evident that both Spenser and Milton were greatly indebted to his wonderful descriptions and still more wonderful illustrations. From one of the latter, a whale mistaken for an island, Milton must have derived his

> "Fixèd anchor in his scaly rind;"

and from another Spenser obtained his idea of

> "The horrible sea-satyr, that doth show
> His fearful face in time of greatest storm."

In truth, Spenser's list of ocean-monsters in the last canto of book ii. of the "Faëry Queen" seems wholly founded upon Gesner. As a list, it is sufficiently complete, we think, to satisfy our readers:—

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"Eftsoons they saw an hideous host arrayed
Of huge sea-monsters, such as living sense dismayed:

"Most ugly shapes and horrible aspécts,
Such as dame Nature's self might fear to see,
Or shame, that ever should so foul defects
From her most cunning hand escapèd be:
All dreadful portraits of deformity;
Spring-headed hydras, and sea-shouldering whales,
Great whirlpools, which all fishes make to flee,
Bright scolopendras, armed with silver scales,
Mighty monoceros with immeasured tails:

"The dreadful fish that hath deserved the name
Of Death, and like him looks in dreadful hue;
The grisly wasserman, that makes his game
The flying ships with swiftness to pursue;
The horrible sea-satyr, that doth show
His fearful face in time of greatest storm;
Huge ziffins, whom mariners eschew
No less than rocks, as travellers inform;
And greedy rosmarines, with visages deform:

"All these, and thousand thousands many more,
And more deformèd monsters, thousand fold,
With dreadful noise, and hollow rumbling roar,
Come rushing, in the foamy waves enrolled,
Which seemed to fly, for fear them to behold;
Nor wonder, if these *did* the knight appal;
For all that here on earth we dreadful hold,
Be but as bugs* to fearen† babes withal,
Comparèd to the creatures in the sea's enthral."

But we might continue our quotations, in prose and poetry, until they made up a goodly volume. To modern readers such stories are interesting simply from their romantic exaggeration; they possess no scientific interest. But our ancestors were by no means given to incredulity, and were contented to listen to the most wonderful recitals. And therefore they invented all kinds of devices for the use of those who went down to the deep in ships.

To release yourself from the sirens, according to Vincent de Beauvais, you have nothing to do but hurl empty bottles into the sea: the sirens will hasten after them, and

* Bugbears. † Frighten.

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meanwhile you may escape. This is doing at sea what is often done on shore.

But a better way is to stop up your ears, so that you may be deaf to their entrancing strains.

The French poets did not fail to celebrate them :—

> "Car des ceintures en amont,
> Est la plus bele riens (*chose*) del mont (*monde*) :
> En guise de femme formée
> L'autre partie est formée,
> Comme poisson et comme oisel !"

Some went so far as to assert, after Hesiod, that they lived 291,600 years—not a day more nor less !

The first English ship which sailed on a voyage to the Indies, the fanciful lands of Cathay, was the *Good Hope*. She set out in 1522. Her chief pilot, the illustrious Cabot, received some curious instructions for his guidance.

He was recommended to celebrate public prayers both morning and evening, and to proscribe rigorously all such inventions of the devil as dice, cards, chess, and the like. So far so good, but some of the other recommendations were of a very questionable morality. For example : he is enjoined "to attract on board all the natives of foreign lands, and to intoxicate them with beer and wine, so as to grow acquainted with the secrets of their hearts." The instructions terminate with a recommendation to all voyagers to "beware of the artifices of certain creatures which, with 'the heads of men and the tails of fish,' swam about armed with bows and arrows in the fiords and the bays, and lived upon human flesh."

In following up one story after another, we have advanced into the sixteenth century. But it is necessary we should retrace our steps.

In the "Icelandic Chronicle" of Storlaformus, written

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in 1215, mention is made of two monsters; and, what is better, they are described with some degree of carefulness.

The first has been called by the Norwegians, *Haffstramb*; they exposed themselves, waist upwards, above the water. "It is like," we are told, "a man in the neck, head, countenance, face, nose, and mouth, except that the head was extraordinarily lofty, and pointed on the summit. The shoulders were broad; and at the end of each shoulder hung the trunk part of an arm, without any hand. The body tapered off below, and no one had ever seen its shape below the waist. Its gaze was icy. Whenever it appeared on the surface of the deep, great storms arose."

The second monster figures in Norse story under the name of Masguguer:—

"Its body down to the waist was that of a female. It had plump breasts, scanty locks, large hands at the extremity of each truncated arm, and long fingers webbed together, like the foot of a goose. It has been seen with fish in its hands, as well as eating them; and its appearance invariably preceded a tempest. If it plunged into the water with its face turned towards the seamen, this action was a sign that they would not be shipwrecked. If it turned their back upon them, they were lost!"

The *Haffstramb*, says Landrin, is evidently the seal formerly known as the bishop, from the supposed resemblance of its pointed head to a mitre. A portrait of it is given by Rondelet. A specimen was caught in 1531, and sent to the King of Poland, "to whom," says Rondelet, "it made signs expressive of its anxiety to return to the ocean, into which, without further delay, it was accordingly thrown." Rondelet omits other particulars; he says, *be-*

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cause he believes them to be feigned; for "such is the weak vanity of mankind, that, not content with truths sufficiently marvellous in themselves, they are for adding wonders to them of their own invention. As to the likeness of the monster, I give it as I received it, neither affirming nor denying the truth thereof."

A TRITON (*facsimile of an engraving by G. Schott*).

At this epoch it would seem that authors were not in accord with one another respecting the amount of credence which might be given to the myth.

The most serious said, with the celebrated encyclopædist, Brunetto Latini, that the sirens were symbolical beings, whose history recalled without doubt the sad enchantments of gay women, or else very clearly alluded to the white and very poisonous serpents so named in Arabia.

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But others, like Gaspard Schott,* accept as true, and reproduce, the fanciful *portraiture* of the tritons.

No one, indeed, suspected the truth—that is, the identity between these monsters and the seals.

It is especially in the zoological works called *Bestiaria* that we find a summary of the beliefs and legends popular at this epoch.

Every reader may not know what is meant by a *Bestiarium*. It was a collection of anecdotes relating to the lives of animals or *bestiæ*, and so arranged that the conclusions drawn from all these anecdotes linked into one another. The author could thus draw out a series of reasonings in support of any particular theme, by resting each of them upon an admitted fact.

For example: the *Bestiaria Divina* of Guillaume, a "clerk of Picardy," is a succession of moral and religious examples founded upon examples drawn from animal life. The siren seduces, then kills,—therefore we ought to resist those worldly seductions which always entail the most grievous misfortunes.

The *Bestiaire d'Amour*, by Richard de Fournival, appeared in 1250. The author seeks to prove to a lady, by relating several *historiettes*, that she ought to respond to his affection. The work acquired a great popularity, if we are to judge from the number of copies in manuscript which have been handed down to us. It was followed by the *Réponse de la Dame*, in which the latter resumes, and refutes, all the arguments of her would-be adorer.

Fournival depicts the siren after this fashion:—

"Like to him whom the *Seraine* kills, when she has lulled him asleep by her singing. For there are three

* Schott, "Physica Curiosa," ed. 1662, in quarto.

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seraines; of whom two are half women half fish, and the third half woman half bird; and they play all three together,—one on a two-holed flute, the other on a harp, while the third sings with her full voice. And their melody is so pleasant that no one can hear it without wishing to join them. And when the man is ensnared, and he sleeps, and a seraine finds him asleep, she slays him. And it seems to me that she is very guilty when she treacherously kills him, and the man when he trusts to her."

It is thus, he adds, with a practical application of the fable, that you have seduced me by your charms, and afterwards betrayed me by rejecting my love.

But the lady takes up the same story, and draws quite a different conclusion from it. The sirens, she says, are deceitful, and I will not be lulled asleep by your words, as men by their singing. "Car, sir mestre, si je me fiais à vos beaux discours, je serais bientôt périe....." [For, sir master, if I confided in your gay flatteries, I should soon perish.]

VOYAGERS, AND THE SIRENS OF AMERICA AND THE INDIES.

It is easily conceivable that mariners who set out upon distant voyages imbued with such ideas would hardly fail to meet with sirens everywhere. Nor did this fail to happen.

Christopher Columbus, navigating near San Domingo, met with three sirens dancing among the waves. They were dumb. He thought them very ill-featured, and that, apparently, they regretted Greece.

The same waters, nowadays, are swarming with *lamantins*, which the Spaniards call *peje-muger*, woman-fish, and to which we shall hereafter refer. At Vinaga, in the East Indies, the same name is given to the *dugong*.

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THE SIREN OF AMERICA.

The poor Brazilian inhabitants, — those who belong to the least enlightened classes of society, —still cherish the dreams of their ancestors of El Dorados and other imaginary colonies. They still believe that in Central America lies an immense lake, concealing enormous treasures in its bosom, and that this lake is guarded by a siren named *mai das aguas*.

The English captain, John Smith, led an expedition to America in 1614, and, when near the New Continent, saw, gracefully swimming, a woman whose eyes were large, beautiful, and expressive, though slightly round; her nose and ears suf-

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ficiently well made, and her tresses green and long. The captain felt that he was falling in love with this beauteous and faery creature, and manning his boat, rowed away in pursuit; but, unfortunately, she made a somersault, and discovered to her admirer a fish's tail.

Abelinus has given, and Kastner reproduced, the engraving of a marine man who had been captured by some councillors of the King of Denmark, on their voyage in 1619 from Norway to Copenhagen. He was found carrying a fardel of weeds on his head, and was taken prisoner. But scarcely had he reached the deck before he began to speak the purest Danish, threatening to wreck the ship if he were retained prisoner. The terrified mariners hastened to release their prey, whom we may well believe to have been no other than an unfortunate fisherman.

The Indian sea was one of the favourite abodes of these men-fish, and particularly the Dutch islands. Dimas-Bosque, while walking on the shore at Manare, with a Jesuit, some fishers showed him sixteen tritons and nereids, each with double tail and short arms. The Dutch resident obtained one of these animals, which he sent to the Hague, and there it is still preserved.

What astonishes one most, is to see these fables perpetuated in so-called scientific books down to our own days.

In 1718, Ruysch represented some *poissons anthropomorphes*, or marine men, in his "Historia Naturalis."

Finally, to end with the most curious, in a collection published at Amsterdam by Van der Stell, governor of Amboyna, under the title of "Extraordinary Fishes of the Moluccas," you may admire a siren painted by Samuel

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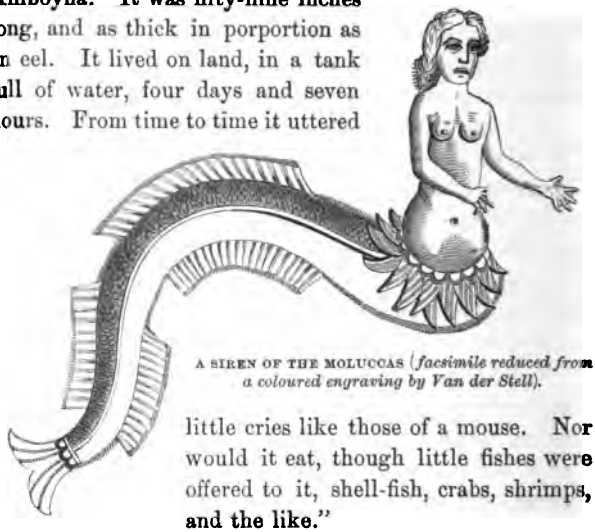
Fallours, and, beneath it, read this most indescribable legend:—

"A monster like to a *siren* was caught on the coast of the island of Borné or Bœren, in the department of Amboyna. It was fifty-nine inches long, and as thick in porportion as an eel. It lived on land, in a tank full of water, four days and seven hours. From time to time it uttered little cries like those of a mouse. Nor would it eat, though little fishes were offered to it, shell-fish, crabs, shrimps, and the like."



A SIREN OF THE MOLUCCAS (*facsimile reduced from a coloured engraving by Van der Stell*).

Certificates are prefixed to this volume "to prevent the incredulity of certain persons."

And thus, in 1718, only a century and a half ago, scientific men were publishing *siren portraits*, after nature.

But this is not all. At a still later date—1735—the savant De Maillet collected innumerable traditions respecting the sirens, and not only maintained their existence, but even pretended that they constituted the primitive race of men.*

* See Note 3.

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GERMAN AND DUTCH SUPERSTITIONS RESPECTING THE SIRENS, NIX OR NECKANS, MERMINNES.

In Germany and Holland the peasants still relate, during the long winter evenings, wild, strange eëry stories of sirens. More than one story-teller will assert that he has seen them, and taken to flight, out of his mind with terror. Some have even heard them speak.

We have known Germans express their great astonishment that we should treat as fables and exaggerations their narratives of the sea-women.

In Germany the siren is called a *nix* or *neckan*, who may be either male or female, and who in many traditions seems gifted with a spirit of wilful waywardness, like our English Robin Goodfellow.

Here are two or three illustrations:—

A man whose house was infested by a nix—for these creatures seem to have lived very frequently on land—could devise no other way of getting rid of him than by moving. He packed up his goods and chattels, and was preparing to set off with the cart, when the nix thrust out his head, exclaiming, "Eh, well, we're on the move to-day, I see!"

For a similar reason a German set fire to his barn, hoping to burn the nix with it. Turning round to look at the blaze, as he was driving away, the goblin said, "It was time to be off, was it not?"

A nix was playing on his harp when two boys said to him, "What is the use of your sitting and playing there? You will never be saved." Whereupon the poor spirit began to weep bitterly. The boys ran home and told their father, who rebuked them; so they came back again, and said, "Be of good cheer, nix; father says you will

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be saved as well as we." Then the nix took his harp again, and played most beautifully, long after it was too dark to see him.*

In reference to this last anecdote, we may mention that the nixes are not immortal, but, in expiation of some very ancient fault, are condemned to long and bitter sufferings. It is asserted, however, that if their conduct is exemplary God will eventually pardon. How this has been ascertained, we are unable to say.

It is said that a young man having captured a nix while bathing, grew enamoured of her, and the two were wedded. But every time he interrogated her as to her origin, she refused to reply. One day her husband was so wrought upon by his friends that he resolved to force an answer from her, and advanced, brandishing his naked sword. Then the nix exclaimed, "If you lose me for ever, the blame is all your own;" and springing into the stream, she disappeared.

The Dutch and the Belgians name the siren the *Neck*, the *Mermaid*, or the *Merminne*. They profess that they have frequently caught them alive.

In 1430, after an extensive inundation, some young girls of Edam, in Holland, going in a boat to look after their cows at Permesonde, found a woman half-buried in the mud; they took her, washed her, and conducted her to their native village to clothe her. She learned easily to sew, to dress herself, to make the sign of the cross; but neither the inhabitants of the locality, nor the scientific philosophers of Haarlem, who came expressly to see her, could make her speak. To us it appears probable that

* Leigh Hunt, "A Day by the Fire," p. 120.

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she was a poor, abandoned, deaf and dumb creature; but then it is much more poetical to see in her a siren!

The Frieslanders assert that there exist but seven *merminne*,—that is to say, daughters of the sea,—and that when a sailor, in love with a seaman's life, vows himself to them, he must never, under pain of death, abandon the sea.

They adduce as a proof, that a mariner who had taken this unfortunate vow, wishing to renounce a seafaring career and marry, they surrounded his house on his wedding night, and carried him away with them to the sea.

They are in general very obliging and serviceable creatures, who willingly attach themselves to a house; but they are extremely susceptible. Thus, a triton, named Flerus, who was intrusted with household work in a farm near Ostend, one day abandoned the house, to the great regret of the farmers, because some mischievous fellow had put *garlic into his milk*. If the neck were anything of an epicure, we can well believe that he found his breakfast very disagreeable.

The principal rôle of the sirens, in the legends of the Low Countries, is to act as prophetesses. Each country has its traditions in this respect, and it will not do to meddle with them.

The whalers of Anvers pretend, or rather pretended (for Anvers no longer carries on the whale-fishery), that when they arrived in the regions frequented by their victims, a siren, who swam incessantly in front of their vessel, would pause and sing:—

Scheppers, werpt de tonnekens vit,
De walvisch zal gaen kommen,

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That is:—

Fishers, quick, your barrels bring,
"The whales are coming," hark, I sing!

Muiden is a very ancient town, which has never to any considerable extent enlarged its boundaries. This is owing to a decree of fate, as pronounced by a *merminne* with a severe voice:—

Muiden zal Muiden blyven
Muiden zal novit beklyven.

In plain English:—

Muiden Muiden shall remain,
And no wealth or influence gain.

In journeying through the Low Countries, a continual object of astonishment to the traveller is the precarious position of the villages in the *polders*—that is, on the low grounds below the level of the sea. They are traversed by canals, and the water flows between two dykes, or embankments, raised several feet above the meadows.

Now, at no great distance from Dordrecht, in the midst of patches of wonderful fertility, like the pastures of Ely, or the Vale of Evesham, is situated the little town of Zevenbergen.

If you are astonished that all the houses are quite new, and are curious to know the history of the place, go and find the burgomaster, and he will tell you that his father had seen the country completely covered with water, and that the tower of the church alone rose like an island above the calm expanse. It is quite recently that the country has been drained.

Formerly, Zevenbergen was a fortified place; its walls were flanked with towers, one of which was called the Tower of Lobbekens. The inhabitants were rich and powerful, but were also dissipated and irreligious.

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One day, a couple of sirens appeared, and in a sad voice chanted the following couplet:—

Zevenbergen zal vergaan,
En Lobbekenstooren zal blyven staan.

In English:—

Zevenbergen shall perish, stone by stone,
And Lobbekens tower remain alone!

In spite of the warning, the inhabitants did not amend the error of their ways.

On the 18th of November 1721, a violent north-west gale drove the waters with so much fury against the dykes, that they yielded.

Seventy-two villages were inundated, and twenty entirely destroyed. Amongst the latter number was Zevenbergen, whose tower alone rose silently above the waves. Thus was the prophecy of the sirens accomplished.

We take leave of this branch of our subject, which might be prolonged over many pages, with some extracts from Mr. Matthew Arnold's fine ballad of the Neckan:—

"In summer, on the headlands,
The Baltic Sea along,
Sits Neckan with his harp of gold,
And sings his plaintive song.

"Green rolls beneath the headlands,
Green rolls the Baltic Sea;
And there, below the Neckan's feet,
His wife and children be....

"He sits upon the headlands,
And sings a mournful stave
Of all he saw and felt on earth,
Far from the kind sea-wave.

"Sings how, a knight, he wandered,
By castle, field, and town—
But earthly knights have harder hearts
Than the sea-children own.

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"Sings of his earthly bridal—
Priests, knights, and ladies gay.
—'And who art thou,' the priest began,
'Sir knight, who wedd'st to-day?'—

"'I am no knight,' he answered;
'From the sea-waves I come.'—
The knights drew sword, the ladies screamed,
The surpliced priest stood dumb.

"He sings how from the chapel
He vanished with his bride,
And bore her down to the sea-halls,
Beneath the salt sea-tide.

"He sings how she sits weeping
'Mid shells that round her lie.
—'False Neckan shares my bed,' she weeps;
'No Christian mate have I.'

"He sings how through the billows
He rose to earth again,
And sought a priest to sign the cross,
That Neckan Heaven might gain.

"He sings how, on an evening,
Beneath the birch-trees cool,
He sate and played his harp of gold
Beside the river-pool.

"Beside the pool sate Neckan—
Tears filled his mild blue eye.
On his white mule, across the bridge,
A cassocked priest rode by.—

"'Why sitt'st thou there, O Neckan,
And play'st thy harp of gold?
Sooner shall this my staff bear leaves,
Than thou shalt Heaven behold.'—

"But lo, the staff, it budded!
It greened, it branched, it waved.
—'O ruth of God,' the priest cried out,
'This lost sea-creature saved!'

"The cassocked priest rode onwards,
And vanished with his mule;
But Neckan, in the twilight gray,
Wept by the river pool.

"He said: The earth hath kindness,
The sea, the starry poles;
Earth, sea, and sky, and God above—
But, ah, not human souls!

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"In summer, on the headlands,
The Baltic Sea along,
Sits Neckan with his harp of gold,
And sings this plaintive song."*

NOTES ON THE ANIMALS IN WHICH THE STORIES OF THE SIRENS HAVE ARISEN—SEALS—MANATEES—DUGONGS.

It may be taken as an indisputable axiom that whereas there is a soul of goodness in all things evil, and wherever the smoke rises fire is secretly burning, so every popular tradition or fable is based upon some more or less evident fact.

Hence, if all these fables of sirens and mermen have been so frequently repeated and attested, it is because certain marine animals exist which bear a tolerable resemblance to the human species.

We are not speaking here of the so-called remains of sirens "cooked up" and manufactured by skilful speculators on the public credulity. Thus, a fisherman on the coast of British India made a factitious siren, by joining together the upper part of the body of an ape and the lower part of that of a large fish. With so much skill were the different pieces united, that it was very difficult to detect the cheat. The fisherman made a public exhibition of it, and, to draw forth the liberality of his visitors, asserted that those who touched the siren would be cured of their diseases. The crowd flocked to the show, and eventually a European acquired the siren for a large sum, and transported it to Europe at the beginning of the present century. The speculation, at first a success, was afterwards forgotten. But not long ago the monster again made its appearance in the curious Museum of Barnum.

* Matthew Arnold, *Poetical Works*, i. pp. 124–127.

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It is probable that the famous siren of the Leyden Museum which is still exhibited, owes its origin to some trick of an analogous character. The same may be said of that of the Hague.

SIREN IN THE LEYDEN MUSEUM.

To impose upon sight-seekers and wonder-lovers, use has also been made of the dried skin of a hideous fish, one of the Raiidæ, the *baudroie*. The pectoral fins have been metamorphosed with special success into the hands of men; and we acknowledge that, in the eyes of a superficial observer, they might easily be mistaken for human members.

Our object, however, is not to record the inventions of puffers and showmen, but to set in a clear light the actual facts which have imposed on individuals of sincerity and good faith. We pass on, therefore, to the *Seals*.

Everybody is acquainted with the seals, and everybody knows that they are distinguished from other carnivorous mammals by their extremely short, flat, palmated, and fin-like feet, which, however well adapted for swimming, they cannot use on land without great difficulty.

Their head is round like a man's, their eyes are large, their ears very small, they have moustaches around the mouth, and a well-defined neck. They are entirely covered with short, rough hairs, except about the face; they have neither arms nor legs, but only hands and feet, which are attached almost directly to the body, owing to

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the smallness and position of a part of the bones enclosed in the body. They are elongated, and terminate in a point, like all fishes and aquatic animals.

The brain and senses of the seals are well developed; they live gregariously, in every ocean, and are polygamous. It is rare that a male has less than three or four females, whom he defends and protects, moreover, with courage.

SEALS.

Essentially amphibious, they are very fond of swimming, and will not take their food except in the water. They love to disport while swimming, with their bodies partly out of the water, so that they seem to dance. Timid and inoffensive, they follow the ships when their curiosity is excited, contemplating the mariners, with large mild eyes.

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"In Corsica," writes M. Charles Martins, "these animals are greatly respected, and gather round the fishermen to catch the fish which the latter cast into the sea."

This, not improbably, may be the origin of Pliny's fables, in which he represents the dolphins as assisting the fishermen. Frequently it seems as if men had confounded divers animals under the common name of "dolphin," and we may well believe, too, that the seals grew sufficiently tame to come and sport upon the shore; a circumstance which, if true, would explain the anecdotes told by Pausanias and others of friendly dolphins.

A young seal, caught by the seamen of the English ship *Alexander*, during an expedition in the Northern Seas, became so fond of his masters, that when they allowed him to bathe in the sea, he never failed to return on board the moment he was fatigued.

When I spent several hours, says Martins, in front of the glacier of Madelina Bay (Spitzbergen), to test the temperature at the bottom of the sea, a seal on each occasion made his appearance. He swam around the boat, raised his head above the water, and seemed as if he would fain have divined the kind of occupation in which these creatures, so novel in his eyes, were engaged. I took care not to frighten him, and every day he approached nearer and nearer. He seemed at length to believe that man was no malignant animal; but his confidence increasing, he came too near the corvette, and unfortunately was shot.

But it was more particularly the designers and painters who gave to their imagination unbridled license. What would the Owens, the Huxleys, the Huets, the Mesnels, the Werners, the Lackerbauers, say to-day, if our naturalists described, or our artists delineated, such curiosities

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"after nature" as those which we have reproduced in *facsimile?*

The seal is docile and intelligent; might it not possibly be domesticated, and made an useful auxiliary of the deep-

MASSACRE OF SEALS.

sea fisheries, as huntsmen have done with the dog upon land? Instead of any economy so useful, our fishers would rather kill it for the sake of its skin and its fat

The seal's oil is obtained by allowing the fat to fer-

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ment in the sun. It is employed for the same uses as whale's oil; it is also good for illuminating purposes.

Our English merchants employ nearly 400 ships and 1500 seamen in this fishery.

As is always the case, the fishermen carry their pursuit to a criminal excess. They piteously kill the young, and the pregnant females, and are thus preparing, sooner or later, for the complete destruction of this amphibian. But they do not trouble themselves much about their successors: "After me the end of the world!" Perhaps, the ill result of their improvidence will be felt sooner than they anticipate, as has happened in the cases of the whalers and oyster-fishers.

THE MONK SEAL (*facsimile of an engraving by Rondelet*).

There are different species of seals. Two among them, peculiar to Scandinavia, received the names of the *Monk Seal* and the *Bishop Seal*. A very curious description in an old naturalist,* accompanied by still more fantastic designs, and pretending to represent these animals, shows

* G. Rondelet, "Universa Piscium Historia," ed. 1554, quarto.

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very clearly at what point and in what manner the ancients unscrupulously altered the truth.

Here is the description of which we speak:—

"In reference to our marine monsters," says Rondelet, "we may speak of the one which in our own time was caught in Norway, after a great storm; and all who saw it incontinently gave it the name of the Monk, for it had the face of a man, but rustic and not very graceful, with a smooth-shaven head; on the shoulders a kind of monk's hood; two long fins instead of arms; the end of the body terminating in a broad tail. The middle part was much broader, and assumed the form of a military breastplate."

THE BISHOP SEAL (*facsimile of an engraving by Rondelet*).

Rondelet asserts that the picture of it was sent to him by Margaret, Queen of Navarre. The fish was caught in a drag-net of herrings, and lived only three days, during which period it made no sign, with the exception of uttering certain moaning sounds, indicative of great sorrow and distress.

We are told that another species was sometimes found in the British Channel. It has a white skin on its cranium, with a black circle round it, like a monk newly shaven. It fawns upon people at

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sea, and entices them into the water, where it satiates itself with their flesh!

We expect that this fantastic creation was nothing more than a sly satire upon the monks.

We have already alluded to the Bishop Seal. Rondelet describes it as a monster more miraculous than the preceding. "I have seen," he says, "the portrait by Gisbert,

THE SEA-LION.

a German physician, to whom it had been sent from Amsterdam, with a narrative in which the writer declared that this marine monster, with a bishop's attire, had been seen in Poland in 1531, and carried to the king of that country, making certain signs to show that he had a great desire to return to the sea, whither he was taken, and thrown into it incontinently." He purposedly omits, he

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says, several circumstances which had been related to him. He treats them as unworthy of belief, nor will he answer for the truthfulness of the portrait.

We do not know to what species we ought to refer the former of these descriptions. Perhaps it is the sea-lion,

THE HOODED SEAL.

whose skin is thicker on its shoulders than on any other part of the body.

As for the Bishop, it is evidently the *Hooded Seal* of Greenland (*Stemmatopus cristatus*), which wears on its head, when it is adult, a kind of movable sac, ridged on the top, with which it can cover its eyes and nose at will.

It is easy to conceive that when the drawings of voyagers

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were so conspicuous by their disregard of truth, they would not hesitate to say that they had seen sirens when they had encountered only seals. As for their singing, it was pure invention; for the seal's voice resembles the dog's bark, though it is a little gentler.

Other amphibia than the seals may have helped to pro-

THE MANATEE.

duce illusions and suggest analogous tales. As, for example, the cetacea: the *manatee* and the *dugong*.

These cetacea resemble but slightly those of which we have already spoken, the dolphins, cachalots, whales, &c. Their form reminds one much more naturally of that of the seal; and, moreover, they are exclusively herbivorous.

The *Manatees* have a short snout, garnished with

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bristles which have all the effect of a beard or moustache. The fin consists of five fingers, which are easily distinguished in spite of the connecting membrane, and four of which are terminated by nails. The breasts of the females are very large.

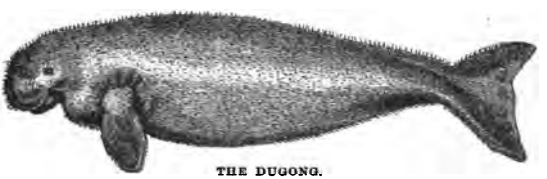
They sometimes come ashore, but their customary place of sojourn is the sea. They swim with a slight inclination forward, but with the head, neck, and anterior part of the body out of water.

Like the seals, they are very sociable, living in tolerably numerous troops, and willingly approaching man.

The latter ill repays their confidence, hunting them to the very death for the sake of their flesh, which, they say, is exquisite.

They are named, in different languages, *lamantin* and *peje-muger* (woman-fish).

The manatees are found in great numbers on the coast of San Domingo, where Christopher Columbus landed, and on those of Cayenne and Senegal.



THE DUGONG.

It is in the Indian seas that we meet with the *Dugong*, which is much smaller than the manatee; for while the latter attains a stature of fifteen feet, the former does not exceed a small fish in size.

For the rest, these two cetaceans closely resemble one another, and their habits are the same. The dugong is

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perhaps even uglier than the manatee, on account of its very flat muzzle.

In all countries inhabited by the Malayan race, its flesh is so much esteemed that it is reserved for the table of princes. And hence a war of extermination has been waged against it, which has rendered it very rare.

A FEW LAST WORDS UPON SIRENS—THE HERALDIC ART—POETRY—MUSIC.

Sirens figure very frequently in the armorial bearings of our noble families. They are represented full face or in profile, holding a mirror in the right hand and a comb in the left. Their tail is sometimes single, sometimes double.

Occasionally they make their appearance in a keeve. They are then called *Malusinas* or *Melusines*.

These fantastic monsters, at once terrible and charming, attractive and ferocious, would necessarily inspire the genius of the poet and the artist, who are never happier than when they can plunge into the dim, shadowy recesses of the Fable World.

Sculptors have loved to represent them, and we meet with them on every ornament in the Roman style; while the painters were ever ready to reproduce in their pictures that fusion of a woman's bust and a fish's tail. There are few allegorical pictures in the framework of which they do not entwine, and Rubens paints them of a glowing beauty.

The poets also have celebrated them. Goethe—the immortal Goethe—has brought the ancient Sirens and Nereids on the stage, in "Faust." Thus:—

"*The Sirens.*

"Of old time, in the awful night,
Have the Thessalian necromancers,
By wicked charm and spell,

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Drawn thee towards the earth.
From the height of the dome of Night
Do thou cast a calming glance
On the luminous swarm of the tremulous waves,
And brighten the rising contention of the sea.
O beautiful goddess, Moon! be propitious
To us, thy slaves devoted.

"*The Nereids and Tritons.*

"How the vast ocean echoes with the sound
Of your all-melodious voice!
Call around you now
The people of the abyss!
When we saw the terrible gulfs of the tempest open,
We sank down into the stillest depths;
But your sweet songs attract us to the surface.

Lo, in our rapture,
We have decked ourselves with golden chains,
With crowns and gems, plumes and glittering girdles!
All these belong to ye,
Are the spoils of the wrecks ye cause.
The entrancement of your voices
Have attracted us, O demons of the fiord!

"*The Sirens.*

"Well do we know that in the ocean brine
The fishes joy in their ever-floating life;
But we, we, stirred by joyous emotion,
Would have you know to-day
That we are more than fishes!

"*The Nereids and Tritons.*

"Hither before we came, the same idea
To us occurred! Brothers and sisters, mark—
The shortest ocean-course would well suffice
To prove that we are more than fishes!"

And Béranger says:—

"Du sein de l'onde un mot surnage,
Mot que la nuit fera redire un jour,
Amour! Amour!
Qui dit ces mots? C'est la Sirène,
Guettant sa proie au bord des eaux."

[From the bosom of the wave a word floats upward,
A word which the night will make the day repeat,
Love! Love!
Who utters this word? It is the Siren,
Watching for her prey on the margin of the waters.]

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Herr Kastner has composed a melody upon these monsters, and published it, accompanying it by a noble and erudite work on their nature, their figure, and their part in poetry and music.

And, finally, the poetry of the North loves to relate the adventures of the mermen and mermaids, the neckan, and the water-spirits.

We may best indicate the character of these poems by quoting a very quaint and curious Swedish ballad on the neckan:—

"The Neck comes forth upon the white sand, and assumes the form of a vigorous man.

"He enters the tailor's house, and clothes himself in garments of blue.

"Then he goes across the island, and finds the beautiful young dancing girls.

"The Neck begins to dance with them, and the young girls grow red and pale alternately.

"He takes a bracelet of gold, and lets it drop into the hands of one of them.

"'Listen, young girl, to what I have to say. On Sunday we will meet together in the churchyard.'

"The young girl comes to church, and the farmer's boy conducts her.

"The bridle of the horse is of silk, the harness is of gold.

"'Dear conductor, do not upset the chariot.'

"She arrives before the church, and encounters her betrothed.

"The Neck draws near the holy pile, and fastens the bridle of his horse to its palisade.

"He enters the church. The maiden is sore troubled.

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"The priest, in front of the altar, asks, 'Who is yonder man standing erect in the nave?'

"'Where wert thou born? Where hast thou been bred? Who made thee garments?'

"'I was born in the waters, there I was bred up, and there my garments were made.'

"The people who had been present now withdrew to their houses. The young girl remained alone with the Neck.

"'Where is thy father? Where is thy mother? Where are thy kinsmen and friends?'

"'My father and mother are in the blue waves; my kinsmen and friends lurk among the reeds.'

"'It is so sad to dwell under the waters, and there are so many people passing over your head.'

"'Ay, it is sad to dwell in the waters, and many are they who pass over our head.'

"The Neck seizes the young girl by her fair tresses, and fastens her to the pommel of his saddle.

"She utters a cry of pain, which is heard afar in the king's palace.

"They hasten to the bridge in search of the maiden, and find there only her shoes with their buckles of gold.

"They look for her on this side, and on that, and they find a lifeless body."

We began our book with fable and legend; with fable and legend we conclude it: remarking only, that in this prosaic age it is sometimes well to surround one's-self with an atmosphere of visions, if it be but for the purpose of deciding out of what stuff those visions are made.

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Notes and Additions.

1.—MOLLUSCS.

THE author of the French work on which the present volume is founded acknowledges, in an appendix, the following fact, connected with the history of gigantic molluscs, and communicated by M. Pouchet:—

"A curious example of indefinite growth among molluscs was pointed out by M. Nordmann, some three or four years ago. He had met with edible mussels which had acquired incredible proportions. It was impossible to doubt their identity with those purveyed by the fishmonger: before his eyes were individuals of all ages and all intermediate dimensions caught in the same fishing-grounds. These gigantic mussels inhabit an unexplored corner of the globe: the coast of Edgecombe Island, near Sitka, in North-eastern America."

2.—THE SHARK.

A remarkable instance of the voracity of sharks is recorded in the *Daily News* of the 15th of August 1867:—

On Monday, the American ship *Josephine*, Captain Mitchell, arrived in port from Rumados (Cuba). The captain relates the terrible end of two men of his crew, who were devoured by sharks while his ship lay anchored at Rumados. On the 26th of June he had gone ashore, with two of his men, to purchase provisions.

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After concluding his transactions, he returned in his boat with his sailors. The wind was fair, and the boat was making good way, when a gust of wind suddenly arose, capsized the boat, and the captain and his two companions were flung into the sea where the water was two fathoms deep.

A couple of casks which had been in the boat floated on the surface of the water, and the captain ordered his men to hold on by them until some help arrived. He himself clung to the mast, which rose about a foot out of water. The captain thought the two men had carried out his instructions, but a few minutes afterwards he heard them shriek. Looking around him, he could not catch sight of them; but a minute afterwards he found the water red with blood. The captain no longer doubted that the unfortunate men had been seized by sharks.

He then prepared himself for death, feeling that there was no hope of safety, the waters being infested with numerous sharks. He bound himself to the mast of his boat, and for thirteen hours remained in this position, a prey to the greatest perplexity of mind. The boat had capsized on the 26th, at four o'clock in the afternoon, and about two o'clock on the morning of the 27th the captain recognized that his apprehensions for the last two hours had been well-founded. When day began to break, Captain Mitchell discovered two enormous sharks swimming within an oar's length of him; evidently they waited only for a favourable moment to seize him, and drag him under the water.

Captain Mitchell remained three hours longer in this frightful situation. He was exhausted with fatigue and paralyzed by fear, when, fortunately, about five o'clock, a small boat passing near at hand took him on board. The approach of the skiff frightened the sharks, and the captain, nearly swooning, was saved from his agonizing position. He asserts that his preservation was owing to the circumstance that a small portion of his boat was above water: the wind did not cease to agitate and lash the waves into foam, which prevented the sharks from approaching nearer; otherwise, the captain must have perished.

Such is the story told in the *Daily News;* but, for our own part, we frankly confess it has a very suspicious air of exaggeration

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about it, and we cannot believe that the two sharks, when within an oar's length of the captain, would have been so easily scared from seizing their prey.

3.—DE MAILLET.

The recent discussions, says M. Landrin, on the Origin of Species, excited by Darwin's remarkable books, have recalled to the minds of French savants a curious work, by M. de Maillet, entitled "Telliamed."* As this work is nowadays very rare, the majority of writers who profess to have quoted from it have really quoted from Voltaire, and, consequently, have committed the same error as the French philosopher; asserting that De Maillet makes men spring from fish, while, in reality, he says no more than that the sea contains the original type of every being; that birds descend from the flying fish, dogs from seals, men from tritons, and so on. It has occurred to us that the reader would not be displeased if we reproduced the original chapter in which De Maillet develops his fantastic theory; and we believe that we cannot furnish a more curious supplement to our study of "the Monsters of the Deep."

It is true that De Maillet has been led by his own imagination to accept, and endeavour to prove, a thousand absurdities, as we shall shortly see; but not the less is his the merit of having been the first to demonstrate the marine origin of the terrestrial deposits, and he is far from deserving the clever, biting, but somewhat superficial criticism of Voltaire, who says of him:

"He sees some shells, and this is how he reasons:—'These shells prove that the sea was for thousands of centuries at Memphis:' hence, the Egyptians and the monkeys incontestably spring from salt-water fish."

Born at Saint-Mihiel, in Lorraine, in 1656, De Maillet died at Marseilles in 1738. As Consul-general in Egypt, then in Abyssynia, and at Leghorn, and next at Barbary, he protected with much ability the commercial interests of France, and secured a considerable pension. He devoted his last years to the composition of his "Telliamed," in which he displays an immense erudition,

* "Telliamed, ou Entretien d'un Philosophe Indien avec un Missionaire Français sur la Diminution de la Mer," par M. de Maillet. La Haye, 1755.

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and, let us repeat, demonstrates one of the discoveries on which modern geological science is founded. His book did not make its appearance until several years after his death. He borrowed, it is said, the idea of the section which we reproduce from the "Dialogues" of Lamotte-Le Vayer, but this assertion is far from being proved.

"Now, as regards the origin of these animals, I remark that there is not one which walks, or flies, or crawls, but the sea contains some species like, or approximating to it, and the transmission of one of these elements to the other is possible, probable, and even supported by a great number of examples. I do not speak only of amphibious animals, of serpents, crocodiles, otters, various genera of phocæ, and of a great number of others which live equally in the sea or in the air, or partly in the waters and partly upon earth; I speak, too, of those which live only in the air.

"You have read, undoubtedly, the authors of your country who have written of various species of sea-water and fresh-water fish known up to the present time, and who have furnished representations of them in their books. The discovery of America and its seas revealed a number of new species which are peculiar to them, just as we meet with others in the seas of Europe, Africa, and Asia which we do not find elsewhere.

"We may even say that between the fishes of any particular species which are caught equally everywhere, there is always some difference, according to the difference of the seas; either because naturalists have placed under one genus species approximating to one another, or because these fishes are really of the same species, with some slight difference only in their form. It is thus that the species of salt-water fishes which have entered into the rivers, and populated them, have undergone in their figure, as in their taste, a perceptible change. For example: the carp, the perch, and the sea-pike, differ from those of their species which are caught in fresh waters.*

* We must remember that in the time when De Maillet wrote, the synonymy of the fishes had not been cleared up by the labours of Lacépède, Blok, Cuvier, and others. There are neither carps, perches, nor pikes in the sea.

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"Now the resemblance of figure, and even of inclinations, which is remarked between certain fishes and some terrestrial animals, is surely worthy of attention; it is even surprising that no person, so far as I know, has hitherto endeavoured to fathom the reasons of this conformity. Without undertaking to treat profoundly so vast a matter, permit me to make a few observations. We know from the narratives of famous divers of antiquity, whose recollection has been preserved for us by history, by the evidence of those whom my grandfather employed for eighteen months in examining the condition of the sea-depths and whatsoever took place within its bosom, we know by our own investigations, that the animals which it produces are of two kinds: one, *volatile*, rises from the bottom to the surface of the waters in which it swims, and lives; the other crawls along the bed, and rarely quits it, and has no disposition to swim. Now, who can doubt that from the volatile genus of fishes come those birds which rise into the air, and that from those crawling along the sea-bed proceed our terrestrial animals, which have neither the disposition to fly nor the skill to rise above the earth?

"To convince one's-self that both have passed from the marine into the terrestrial state, it is sufficient to examine their figure, their reciprocal dispositions and inclinations, and to compare them with one another.

"Let us begin with the *volatile* genus: pay attention, if you please, not only to the form of all the species of our birds, but also to the diversity of their plumage and their inclinations: you will meet with none whose like you will not find in the sea; fishes of the same conformation, whose skin or scales are uniform, painted or varied after the same fashion, whose pinions or fins are similarly placed, who swim in the waters as birds of their figure fly and float in the air, and who travel in a straight or circular course, and hunt, in the case of birds of prey, just as fishes of the same form do in the ocean-waters.*

"Observe, moreover, that the migration from a watery to an aërial residence is very much more natural than people commonly think. The air which encircles the earth, at least up to a certain

* It is unfortunate that these assertions are not supported by any example, so that we cannot guess to what birds or fishes De Maillet is alluding.

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elevation, is largely commingled with aqueous particles. Water is an air loaded with particles of water much coarser and much heavier than that superior to which we give the name of the atmosphere, though both are really but one and the same thing. Thus in a hogshead filled with liquor, though the lower part be charged with much coarser qualities, and consequently is less clear and less thick than the upper, it is nevertheless evident that a portion of the fluid subsists constantly in the precipitated lees, and that a portion of these lees remains mixed up with the floating liquor, but in a much greater quantity immediately above the principal lees than in the upper portion.

"It is thus that immediately above the waters the air surrounding them is more loaded with aqueous particles than at a greater elevation. And so in a tempest by which the waters of the sea, the lakes, and the rivers are agitated, it is still more thickly charged than after the rains which have restored to them the aqueous particles the winds had upraised and mingled with the air. It is thus, finally, that in certain climates, and in certain seasons, the air encircling the earth and sea is so loaded with these aqueous particles that it must be considered as an almost equal commixture of both.

"It is then easy to conceive that animals accustomed to sojourn in the waters may have been able to preserve their lives by respiring an air of this quality. 'The lower atmosphere,' says one of our writers,* 'is only dilated water. It is moist, because it comes from the water; and it is warm, because it is not so cold as it would be if re-condensing into water.' He adds: 'The sea contains fishes of nearly every form, terrestrial animals, and even birds. It has also plants, flowers, and a few fruits: the nettle, the rose, the pink, the melon, the grape find there their analogues.'†

"Add, sir, to these reflections the favourable dispositions which may be discerned in certain regions for the migration of aquatic animals from their watery abode to a home in the atmosphere,—

* Sorel, folio 249.

† Our author here again allows himself to be led into a belief that an analogy of name implies an analogy of fact. In reality, he mistakes for plants the medusa (or "nettle"), the actiniæ ("rose" and "pink"), the sea urchin ("melon"), and the eggs of the poulpe ("grapes"),—all belonging to the animal kingdom.

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the very necessity of this passage under certain circumstances: for example, if the sea shall have abandoned them in the lakes, when water will have finally diminished to such a point that they will be forced to accustom themselves to live on the earth; or even, independently of this diminution, by some of those accidents which we can regard only as very extraordinary. For it may happen, as, in fact, we know it often *does* happen, that the winged and flying fish, hunting or being hunted into the sea, carried away by the desire of prey or the fear of death, or impelled, perhaps, some paces from the shore by the waves which a tempest stirs up, may be fallen into the reeds or herbage, whence afterwards it was impossible for them to resume towards the sea the impulse which had forced them from it, and that, in this condition, they may have contracted a greater faculty of flight. Then the fins, being no more bathed by the waters of the sea, split up and fell off from their very dryness. While they found in the reeds and herbage into which they have fallen some food for their support, the tubes of their fins, separated one from another, were prolonged and invested with barbs; or, to speak more justly, the membranes which had previously connected them had metamorphosed themselves. The barb formed of these warped pellicles elongated of its own volition; the skin of these animals imperceptibly assumed a down of the same colour, and this down grew. The little wings beneath their belly, and which, like their fins, had assisted them in moving through the water, were converted into feet, and served for walking on the ground. Many other little changes took place in their figure. In some the beak and neck were elongated, in others shortened. It was the same with the remainder of the body. Yet in the whole the conformity of the first figure still exists; and it is, and ever will be, easily recognized.

"Examine, in fact, all the species of hens, large and small, even those of the Indies, those which are crested or which are not so; those whose feathers lie the wrong way, that is to say, whose plumage is in the direction of tail to head,—you will find in the sea exactly similar species, scaly or not scaly. All the species of parroquets, whose plumage is so different, the rarest and most singularly marked, correspond to fishes painted, as they are, black, brown, gray, yellow, green, red, violet, gold or azure; and this precisely in the

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very parts where the plumages of these same birds are so fantastically diversified. All the genera of eagles, falcons, kites, birds of prey,—in a word, all who are known to us as flying in the air, even to the different species of flies, small and great, correspond to similar species which the sea contains, and of which not only are the form and colour the same, but also their inclinations.*

"The transformation of a silkworm or a caterpillar into a butterfly would be a thousand times more difficult to believe in than that of fishes into birds, if the metamorphosis did not take place daily before our eyes, and if we were told of it in a part of the world where it was unknown. Are there not ants which, after the expiration of a certain time, take to themselves wings?† What would there be more incredible to us than these natural prodigies, if we had not been rendered familiar with them by experience? Is not the change of a winged fish, flying in the water, sometimes even in the air, into a bird flying always in the air, but preserving the colour, form, and inclination of the fish, more easy to imagine after the fashion I have just described to you? The seed of these same fish carried into the marshes may also have given rise to this first transmigration of the species, from its abode in the water to a habitat upon earth. Though a hundred millions may have perished without being able to adapt themselves to the change, it suffices for two to have succeeded to originate the new species.

"With regard to animals crawling and walking on the earth, their migration from an aquatic to an aërial habitat is still more easy to conceive. There is no difficulty in believing, for example, that serpents and reptiles may live equally well in both elements; experience does not permit us to doubt it.

"As for quadrupedal animals, we do not find only in the sea certain species of this form, and with the same inclinations, living in the bosom of the floods on the same kind of food with which they nourish themselves on earth; we have also a hundred examples of these species living both in air and water. Have not the marine

* It is almost unnecessary to remark that De Maillet has grossly exaggerated here the very insignificant resemblances between terrestrial and aquatic beings.

† This is inaccurate. These wingless ants, neuters or workers, remain wingless for the whole period of their existence, and play in the ant-republic a part quite different from that of the winged individuals.

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apes * exactly the same form as terrestrial apes? There are even numerous species of them. Those of the southern seas are different from those of the northern; and among the latter our authors distinguish what they call a Danish one, *Simia Danica*. Do we not discover in the sea a fish with two tusks like those of an elephant, and on its head a trunk, with which it draws in the water, and with the water the prey that serves it for nourishment? It is not very long ago that one of these creatures was exhibited at London. Can there be any absurdity in thinking that this marine elephant has originated the species of terrestrial elephants?

"The lion, the horse, the ox, the pig, the wolf, the camel, the cat, the dog, the goat, the sheep, have also their 'likes' in the sea. In the preceding century some sea-bears were shown at Copenhagen, which had been sent to the King of Denmark. After releasing them from their chains, they were allowed to go down to the sea, where they might be seen disporting themselves for several hours. Examine the form of the fishes which are known to us, you will find in them almost the exact outlines of the majority of terrestrial animals.

"There are twenty genera of Phocidæ, or sea-calves, large and small. Your histories and the journals of your men of science speak often enough of occasions when they have been captured, and even tamed. The town of Phocea derives its name, it is said, from the great number of these animals which were always seen in the neighbouring sea. Was there not seen at Smyrna,—it is not more than twenty or twenty-five years ago,—a seal which daily, for five or six successive years, came and rested itself under the divan of the customs-officer (*douanier*)? It sprang from the sea upon some planks two or three feet distant from the shore, and took up its position under this divan; and there it spent several hours, heaving loud sighs, like a person in great pain. This animal, having afterwards ceased for awhile to make its appearance, returned, at the end of three days, with a little one under its arm. And it continued to present itself in this fashion for more than a month, eating and sucking the bread and rice which were thrown to it.

* De Maillet probably means *seals*. As for the illustrations by Ruysch and others, they are as imaginary as those of the tritons.

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"Nearly at the same time another seal made its appearance in the centre of the port of Constantinople. It leaped out of the sea, boarded a vessel loaded with wine, and seized a sailor who chanced to be sitting on one of the casks. The wine belonged to M. de Fériol, French ambassador at the Porte. The seal clasped the sailor under one arm, and plunging back with him into the sea, reappeared at a distance of about thirty paces, holding the man under its arm-pit as if glorying in its conquest: after that it vanished. This animal, says one of our poets, was undoubtedly a nymph, a nereid, who, having fallen in love with the mariner, bore him away with her to one of her aquatic palaces. There is great reason for believing that facts of this kind, happening in the preceding centuries, gave rise to the stories of metamorphoses.

"Roman history makes mention also of seals, tamed, and exhibited to the populace in the public spectacles, saluting them by bending their heads and uttering a loud cry, and performing at the command of their keeper all those tricks which are nowadays taught to different animals by their owners. And have we not seen them grow very fond of those who took care of them, just as dogs attach themselves to the master who brings them up?

"A hundred years ago an Indian prince had tamed one of these *phocæ* or marine bulls. He had called him *Guinabo*, from the name of a lake whither he retired after having feasted in the prince's palace; and when he was summoned, he daily emerged from the lake, accompanied by a troop of children.

"This mode of life lasted some nineteen or twenty years, until one day a Spanish soldier having hurled at him a spear, he would never again issue from the lake if he saw on the shore any men armed, or carrying lances. He was so familiar with the children, and, at the same time, so fat and strong, that on one occasion, it is said, he carried fourteen upon his back from one side of the lake to the other.

"An incident which took place at Nice, nearly a century ago, differed in its details from the anecdote just related. The seal we now speak of was no larger than a calf, with very short feet and a very large head. He lived several days without doing any injury, and eating whatever was given to him; but he died on his way to Turin to be exhibited before the Duke of Savoy.

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"Seals are very common in the seas of Scotland. They repose on the sandy shore, and sleep there so profoundly, that they do not awake until some one approaches. Then they throw themselves into the sea, and afterwards raise their bodies partially out of the water to gaze at the persons gathered on the shore. Many are found also on the coasts of Cuba; they swim up the rivers, and feed on the herbage of their banks. At Rome they were fed upon oats and millet, which they ate slowly and as if sucking out their juices.

"You understand, reader, that what art effects in regard to these *phocæ* nature may effect of her own volition; and that, these animals having lived very conveniently day after day out of the water, it is by no means impossible for them to grow accustomed to such a mode of life, even through the impossibility of their returning to any other. It is in this way, undoubtedly, that all the terrestrial animals have migrated from their aquatic habits to the respiration of the air, and have contracted the faculty of lowing, howling, barking, and of making themselves heard, which they did not enjoy in the sea, or which, at all events, they enjoyed very imperfectly.

"In the time of the embassy of the Marquis de Fériol, of whom I have just spoken, there was caught on the seashore near Constantinople a little *marine dog*, about one foot high. His mother, who was larger than a calf, fat and thick, had guided him to the land. She rushed most furiously on the mariners who had seized her young one; but a few shots which they fired compelled her to regain the sea. This little dog, who was carried to the ambassador's palace, and lived there nearly six weeks, had almost no voice when he was captured, but grew stronger and larger every day. In species he differed from that of certain dogs of Canada who remain always dumb—a fact which incontestably proves that they spring from marine dogs. The one of which I speak was ugly and ferocious; he had small eyes, short ears, and a long and pointed muzzle. A coarse hard hair of a brownish colour covered his body. His tail terminated, like that of certain fishes and beavers, in the shape of a sail or rudder, undoubtedly to assist him in guiding his course through the sea.

"In Lower Germany do they not nourish sea-wolves in basins of fresh water—sea-wolves which, however, may quite as properly

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be called sea-dogs, and which are very common in the northern waters? Have they not the form and hairy coat of what are called Danish dogs? When I was at Dantzig I saw one of them in a basin. At the least sound on the edge of the basin, he raised his head, and seemed to consider what might be its cause. Can we doubt that from this race of sea-dogs has sprung our own, which so closely resembles it in form?

"As for man, who ought to be the object of our principal attention, you will have read, without doubt," adds our philosopher, "what your ancient histories relate of the Tritons or Mermen. But the writings of the ancients on this matter we will put aside. I pass over in silence the assertions of Pliny, who has perhaps been erroneously accused of falsehood, in reference to a Triton who was seen in the sea playing on his flute; unquestionably his music was not very delicate or harmonious.

"Nor shall I dwell upon the very widely extended tradition that there are creatures with perfect human bodies down to the middle, but terminating after the manner of a fish. The fact has passed into a proverb, to designate a work the end of which does not correspond with its beginning.* I shall omit also the history of the Sirens, who, by the sweetness of their songs, attract men only, it is said, to devour them. I shall forget, in a word, everything which may be regarded as a production of the imagination of poets, and confine myself to attested facts, occurring close to our own times, and within the reach of your researches."

Here De Maillet cites numerous stories of sirens in support of his assertions. As in a preceding chapter we have related the most interesting, we think it useless to repeat them, and skipping a few pages, we come to De Maillet's conclusions:—

"In reflecting upon all this," says De Maillet, "ought we not to believe that if our species still finds in the use of the waters help and assistance to the most important mysteries of nature—that is, in the desire of perpetuating the race, in the healing of divers maladies, in the preservation of bodily health and the re-establishment of enfeebled energies—this element so favourable to it must be its natural element?"

* "Desinit in piscem mulier formosa superna."—HORATIUS, *De Arte Poetica*.

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But he does not stop here, and growing more explicit, he sums up, and finally enunciates his whole system in concluding his book:—

"The disposition, still fierce and savage, of so many tribes and animals inhabiting the northern regions, ought to be regarded by us as an image of the still recent transmigration of these races from their aquatic to an aërial medium: it is a sufficiently clear proof of the trivial change which has taken place in their condition. You may note these still recent traces of the birth upon our globe of various races of men and animals in nearly every part of it. The creatures captured by the Dutch on the coasts of Tierra del Fuego in 1708, who differed from men only in speech; those of human form discovered, as I have said, in Madagascar, walking upon the hind-feet as we do, but also deprived of the use of the voice, though, like the others, quite able to understand what we say; these men who scarcely appear human belong, perhaps, to races who have just emerged from the floods, and in whom the vocal organs are wanting, as is still the case with certain Canadian dogs. But both will acquire the use in the course of several generations."

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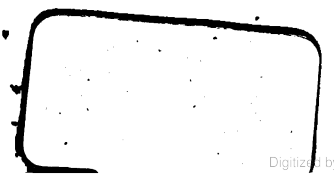
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